ERIC Document Resume	See Instruction Sheet	DATE OF RESUME 3/2/65	DATE RECEIVED

A. PUBLICATION DATA

1. ERIC ACCESSION NO. 242	2. ORIGINATOR CONTROL NO(S). 7114	3. IDENTIFICATION NO. N.A.	DO NOT WRITE IN SPACE BELOW

4. AUTHOR(S):
Cowen, Philip A., director

5. TITLE OF DOCUMENT ABSTRACTED:
Needs and Facilities in Higher Education in New York State

6. PUBLICATION TITLE:
N.A.

7. EDITOR(S):
N.A.

8. PLACE OF ORIGIN
ORG: State Univ. of N.Y.
ST. CITY, STATE: Albany, New York

9. PUBLISHER OR SOURCE
State University of New York

10. VOL.	11. PAGES	12. MO./YR	13. TOTAL PP.
N.A.	N.A.	57	124

TELE. EXT.
INST/LOC CODE

MICROFILM COPY AVAILABLE
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TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☐
FINAL ☒
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR
report

16. INDEXING TERMS (8-12)
needs O-18
bldgs. & equip. R-28
planning P-15
measurement O-12

17. ABSTRACT (MAX. 250 WORDS)

Deals with needs and facilities of colleges and universities in the State of New York, projected to 1970.

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION	20. DIVISION OR DEPT.	21. CONTRACT NO. / PROJECT NO.
	22. TOTAL COST OF PROJECT	
	23. DURATION OF PROJECT	U.S. Department of Health, Education, and Welfare Office of Education

NEEDS AND FACILITIES IN HIGHER EDUCATION in NEW YORK STATE

7114

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education

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IV-20

The University of the State of New York
The State Education Department
Albany, 1957

K65r-Mr 57-4000

8/15 ED000242

NEEDS AND FACILITIES IN HIGHER EDUCATION in NEW YORK STATE

The University of the State of New York
The State Education Department
Albany, 1957

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FOREWORD

The Board of Regents of The University of the State of New York authorized a series of studies in higher education in January 1956. This is a report of the study of needs and facilities. It was preceded by three staff reports, two of which were prepared for meetings of the Board of Regents in November and December 1956. The third was prepared for limited distribution pending completion of this report.

This action of the Board of Regents followed a statewide conference called by Commissioner James E. Allen, Jr. on December 19, 1955, and attended by representatives of approximately 20 higher institutions. At this conference, a program of research was endorsed. Subsequently, Philip A. Cowen, then Associate Coordinator of Research, State Education Department, was released from assignment to State University of New York by President William S. Carlson to serve as director of this study.

Information about the facilities planned by existing institutions for 1960, 1965 and 1970 was obtained during the spring and summer of 1956. Information was also obtained from about 50,000 high school seniors in June 1956, regarding their plans for post-secondary education.

During October 1956, college officials met in 13 conferences to receive and discuss this information and also to discuss a number of assumptions that were proposed as guides for the development of higher education. Dr. E. K. Fretwell, Jr., Assistant Commissioner for Higher Education, and the undersigned served as chairmen for the conferences. It is significant to record that from one to three members of the Board of Regents attended nearly all of the conferences and participated in the discussions.

Arrangements for the program of testing the high school seniors were made and carried out by Peter P. Muirhead, Chief, Bureau of Examinations and Testing, State Education Department.

The Association of Engineering Colleges arranged for a reassuring check upon facilities for engineering during December 1956. This project was carried out by Professor Norman Barish, College of Engineering, New York University.

The Board of Regents and the Education Department are greatly appreciative of the full and enthusiastic cooperation given by the Association of Colleges and Universities of the State of New York and its member institutions. The Association, furthermore, provided the assistance of Lester W. Ingalls, Executive Secretary.

Likewise, the time, effort and cooperation of the high school officials and their graduating seniors constitute a very important contribution toward the planning for future facilities in higher education.

It is recognized that planning on paper is only the first step that must be taken, and, moreover, that such plans must be restudied periodically in the light of changing conditions. However, the recommendations for facilities that were adopted by the Board of Regents on December 21, 1956, are based upon such conservative estimates of need that they should be put into effect in the shortest possible time.

EWALD B. NYQUIST
Deputy Commissioner of Education

PREFACE

The sections of this report which deal with Two-Year Technical Programs, Four-Year Degree Programs and Engineering do not by design or by implication suggest any particular kind of college organization for providing different kinds of programs.

There are many variations of college organization from which one may choose. Two-year technical education, for example, may be provided by colleges that are limited to terminal programs or by colleges that also have continuing programs of two or four years' duration. There are also several possible variations of sponsorship and control, e. g., State controlled and operated, joint local and State controlled, and privately controlled.

In a similar manner, there are several choices of organization to meet the need in such fields of study as business and accounting, liberal arts, collegiate nursing and teacher education. The first two years of each of these fields of study could be provided by appropriate programs in community colleges as well as in four-year colleges.

It is not within the scope of this report either to suggest or imply any particular kind of college organization. It is, however, quite within the realm of possibility that the organizational structure for higher education may change drastically within the next 15 years. If an adequate number of comprehensive community colleges is established which provide both terminal programs and the first two years of four-year programs, many of the present four-year colleges of different kinds could move in the direction of becoming senior colleges and graduate schools.

It is pertinent to cite, in this connection, that the number of full-time *freshmen* enrolled in public junior colleges in California in 1955-56 had a 50 percent relationship to the number of California high school graduates of the previous year, and that emphasis in the University of California is swinging toward the junior, senior and graduate programs and away from the freshman and sophomore years. Such a development conceivably could take place in New York State.

The problem of cost to the student for college attendance was not included as a part of this study. It is well recognized that both lack of funds and lack of desire prevent many qualified high school graduates from continuing their education, and the economic barrier to college attendance applies more to high cost programs, such as engineering and

medicine, than to lower cost programs. This aspect of higher education was developed rather fully in *Crucial Questions about Higher Education,* State University of New York, 1955.

There are many other pressing problems in higher education, in addition to the problem of facilities, that need attention through research. Some of these will be placed upon the immediate schedule of research activity by the State Education Department.

The three staff reports which preceded this report should now be discarded. During the months that have elapsed since Staff Report No. 1 was prepared several higher institutions have changed their estimates of facilities. This time interval has also permitted a rechecking of data and computations with the correction of a few minor errors, none of which, however, affected the original estimates of need.

P. A. C.

March 14, 1957

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NEEDS AND FACILITIES IN HIGHER EDUCATION IN NEW YORK STATE

INTRODUCTION

So much publicity has been given to the future problems of higher education within the past year that it hardly seems necessary to document the need for this study. All taxpayers know that the elementary schools and the high schools have been forced to double or triple their school plants in order to accommodate the increasingly larger numbers of children born each year since 1940.

It is obvious that these children in about the same proportion as the past, if not in greater proportion, will desire to continue their education beyond high school. The question is, Where?

Following is a summary of some pertinent information that was distributed to college officials in New York State during the course of conducting this study.

College Enrollment—?

College enrollment within a State depends upon many factors, some of which are:

1. Number of children born and surviving to college-age
2. Percentage of children graduated from high school
3. Decisions of youth regarding college attendance
4. Availability of college facilities
5. Economic and sociological factors that influence both decisions regarding college attendance and the facilities, and
6. Migration of students among states.

Inability to forecast the trend of unknown factors, for example, the availability of college facilities during the next 15 years, makes it very hazardous to predict the college enrollment for 1970.

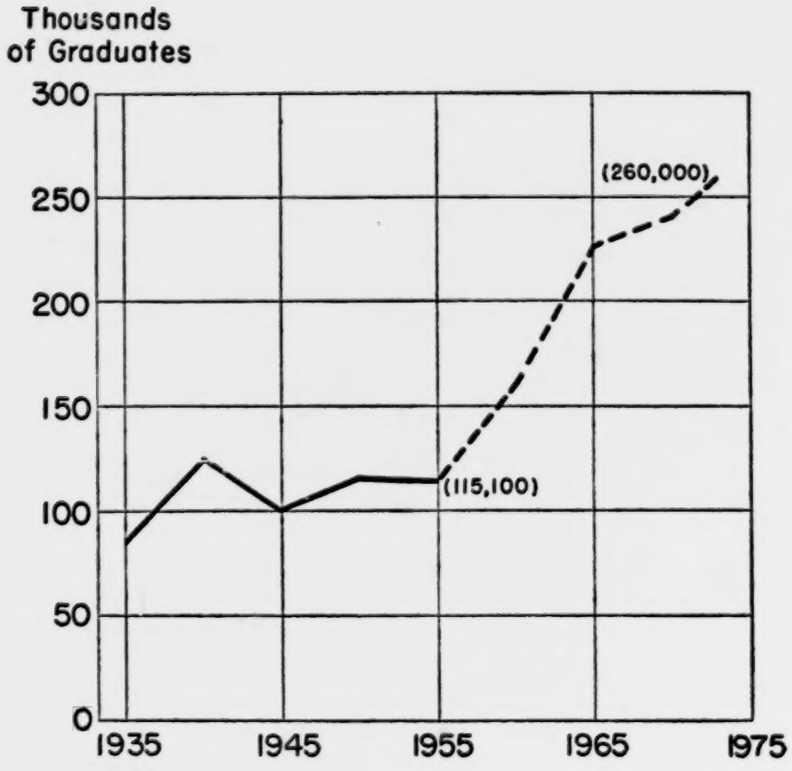
It is a fact, however, that the college-age youth through 1973 are already born, and that in 1955, there were more babies reported in New York State than in any previous year (344,000); 90 percent more than the number in 1936. Moreover, the percentage of youth of high school age graduating from high school is increasing steadily.

As shown by chart I, the projected number of high school graduates for 1973 is 126 percent greater than the number for 1955. Thus, the number of young people standing at a point where they may select a career involving further education will be more than doubled.

It is also an established fact that, over the years, a steadily increasing percentage of youth has continued education beyond high school. Forty-

Chart I

The Trend in High School Graduation
Actual Number of Graduates 1935-1955
and Estimated Number to 1973



eight percent of the high school graduates in 11 New York counties planned to continue their education in 1953; 58 percent from all of New York in 1956.

College Student Costs—?

Students who attend private colleges and live away from home average slightly more for board and room costs ($710) than for tuition and fees ($674). The total of these items averages nearly $1,400.

In church-affiliated colleges the average of board, room, tuition and fees is lower ($1,218) than in nonsectarian colleges ($1,560).

Additional expenses for clothing, transportation, books and supplies, recreation and other costs of living amount to several hundred dollars. The average overall cost to the student in a private college is near $1,800 per year.

The State University of New York charges a tuition fee of $400 at Harpur College. Fees average $83 at State University Teachers Colleges, and $124 at the other undergraduate professional colleges.

Community colleges charge a tuition fee approximating one-third of the cost of instruction—roughly $300 per year. Colleges of the City of New York charge on the average $18.

Average tuition in 27 private liberal arts colleges has gradually been moving upward; the trend is illustrated by chart II.

If economic conditions continue to force tuition upward, as now seems probable, the average by 1970 may exceed $1,000.

To the extent that cost of living increases occur, the costs of board, room and other living expenses probably would be increased proportionately.

Because of the cost factor, opportunities in high-cost colleges may not be within financial reach of qualified youth of average or below average economic standing.

College Student Financial Resources—?

Over 90 percent of college students receive financial assistance from their parents. The amount of family contribution is estimated to be more than 10 percent of net family income. Average family income is slightly over $5,000.

Two-thirds of the college students earn several hundred dollars working during the summer and the college year.

About a fourth of the students obtain a scholarship grant from one or more sources: the college, the State or a private organization—averaging $350 to $400 each.

Approximately a fifth of the students report gifts averaging $50 per year.

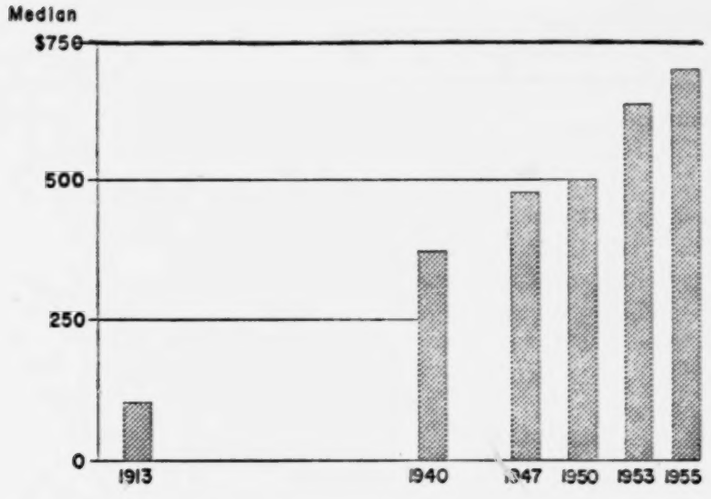
About a fifth of the students used savings, an average of $250.

More than one out of ten students expect to be in debt to the extent of $300. Loan funds, however, have not been fully used by college students.

Chart II

The Rise in Cost of College Education

Median Tuition in Twenty-Seven New York State Liberal Arts Colleges

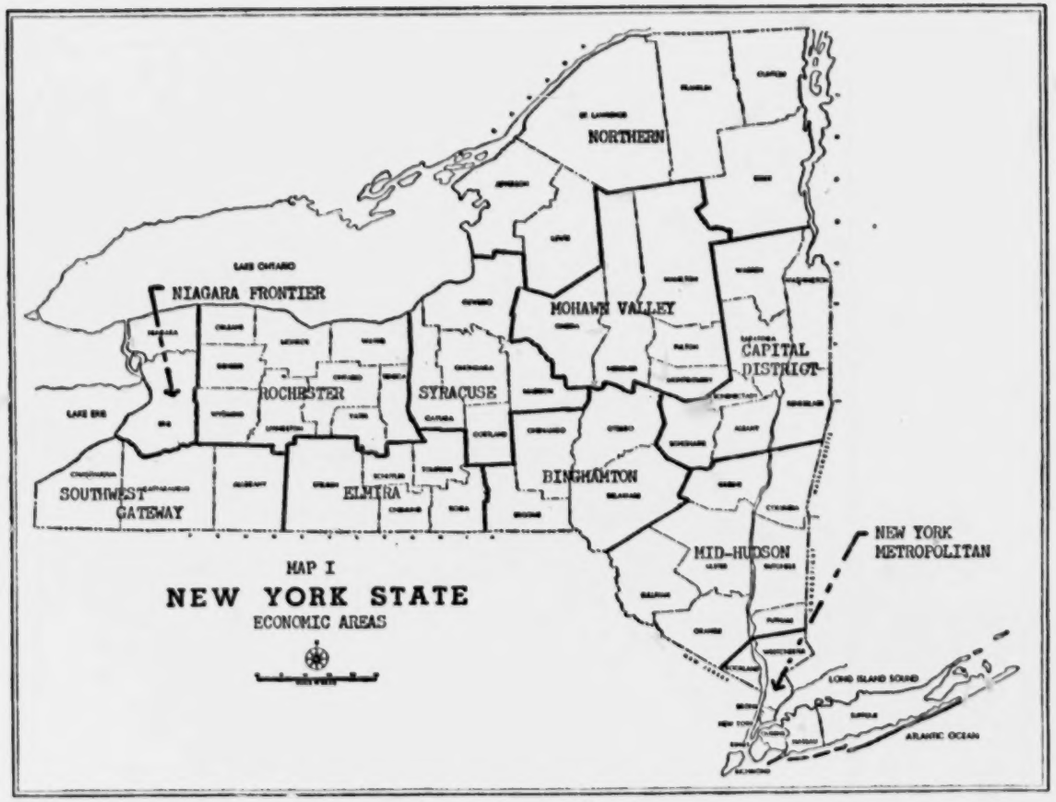


A college student from an average income family with two children might meet his expenses thus if he attends an average cost private college:

Family contribution	$ 550
Student earning	400
Scholarship grant	350
Savings	150
Debt	350
	$1,800

Thus, children from average income families face an economic barrier to college attendance at the present time.

The rising cost of college attendance, plus the fact that many youth have college ability but less than average financial means, is tending to increase the importance of scholarship grants, the use of loan funds, the provision of low-tuition opportunities and college opportunities that permit students to live at home.



MAP I

NEW YORK STATE

ECONOMIC AREAS

The Problem of Numbers

A projection of the number of high school graduates for the State, and for each Economic Area[1] is shown in table 1[a]. Some of the areas are expected to show a greater percentage of increase than others; the percentage of increase is shown in table 2. The shifting of high school graduate population is shown in table 3 which gives the percentage of the total expected to be in each Economic Area, and in subdivisions of the New York Metropolitan Area.

These population increases and the different rates of increase have a direct bearing upon the selection of a location for such new or expanded college facilities as may be needed.

For example, Nassau County had 6.33 percent of the high school graduates of the State in 1955; by 1970 it is expected to have 11.09 percent. In contrast, New York City had 45.37 percent of the total in 1955; but it is expected to have only 36.29 percent by 1970. Moreover, the sociological changes that may occur in the composition of the high school graduate population could have serious implications for the planning of college facilities.

TABLE 1

Number of high school graduates by Economic Areas for 1955, and estimates for 1960, 1965, 1970

COUNTIES AND AREAS	1955	ESTIMATED 1960	1965	1970
Binghamton Area	3,082	3,630	6,041	6,106
Capital District Area	5,644	8,132	12,123	13,667
Elmira Area	2,392	3,502	5,676	5,890
Mid-Hudson Area	4,526	5,655	8,695	9,133
Mohawk Valley Area	3,349	4,599	6,992	7,285
New York Metropolitan Area	69,768	98,072	132,331	137,844
Nassau County	7,286	13,003	17,682	26,849
Suffolk County	2,933	4,091	5,847	7,819
Rockland County	653	1,533	2,268	2,463
Westchester County	6,629	8,394	12,236	12,904
New York City	52,267	71,051	94,298	87,809
Niagara Frontier Area	9,328	14,358	19,196	22,410
Northern Area	3,051	3,945	5,909	6,079
Rochester Area	6,619	9,600	14,309	15,974
Southwest Gateway Area	2,527	3,192	4,958	5,038
Syracuse Area	4,905	7,315	10,770	12,574
Total	115,191	162,000	227,000	242,000

[1] Economic areas as defined by the New York State Commerce Department are outlined on map 1.

[a] A statement about the method of estimating used, and the figures for each county, are shown in appendix A.

TABLE 2

Percentage increase of high school graduates for 1960, 1965, 1970 by Economic Areas based upon 1955

ECONOMIC AREA	NUMBER 1955	PERCENTAGE INCREASE 1960	1965	1970
Binghamton Area	3,082	18%	96%	98%
Capital District Area	5,644	44	115	142
Elmira Area	2,392	46	137	146
Mid-Hudson Area	4,526	25	92	102
Mohawk Valley Area	3,349	37	109	118
New York Metropolitan Area	69,768	41	90	98
Nassau County	7,286	78	143	269
Suffolk County	2,933	39	99	167
Rockland County	653	135	247	277
Westchester County	6,629	27	85	95
New York City	52,267	36	80	68
Niagara Frontier Area	9,328	54	106	140
Northern Area	3,051	29	94	100
Rochester Area	6,619	45	116	141
Southwest Gateway Area	2,527	26	96	100
Syracuse Area	4,905	49	119	156
Total	115,191	41	97	110

TABLE 3

Percentage of high school graduates in each economic area 1955, 1960, 1965, 1970

ECONOMIC AREA	1955	1960	1965	1970
Binghamton Area	2.67%	2.24%	2.66%	2.52%
Capital District Area	4.89	5.01	5.34	5.64
Elmira Area	2.07	2.16	2.50	2.43
Mid-Hudson Area	3.92	3.49	3.83	3.77
Mohawk Valley Area	2.90	2.83	3.08	3.01
New York Metropolitan Area	60.57	60.54	58.30	56.96
Nassau County	6.33	8.03	7.79	11.09
Suffolk County	2.55	2.53	2.57	3.23
Rockland County	.57	.95	.99	1.01
Westchester County	5.75	5.18	5.40	5.34
New York City	45.37	43.85	41.55	36.29
Niagara Frontier Area	8.10	8.86	8.45	9.26
Northern Area	2.65	2.44	2.60	2.51
Rochester Area	5.75	5.93	6.30	6.60
Southwest Gateway Area	2.19	1.97	2.18	2.08
Syracuse Area	4.26	4.52	4.74	5.19
State	100.0	100.0	100.0	100.0
Number	115,191	162,000	227,000	242,000

The overall increase in high school graduates of 110 percent between 1955 and 1970 poses some serious problems. College enrollments have increased during the last few years in spite of a declining number in the college-age population. This situation is reflected by an increase in the percentage of high school graduates attending college. For how long, or by how much, the percentage of high school graduates continuing their education will increase is a matter of speculation. It will depend in part upon the availability of college facilities of different kinds, the desire of high school graduates to continue education, the financial ability of families to pay the cost of sending their children to college and the availability of the required number of college teachers.

Economic Factors Relating to Attendance

In order to appraise the needs of various parts of the State for higher education a number of economic factors that relate to college attendance were reviewed. These factors include population growth, percentage of population under age 18, educational level of the population, proportion of the population engaged in manufacturing, likely economic developments, per capita income and family income. A summary of these factors is given in table 4. Wide deviations from the State average will be noted in some of the Economic Areas[1]. Likewise, there are important variations in several items in counties within some of the Economic Areas.

Sources of Information

Information in this study that relates to need comes from a revised projection of the number of high school graduates through 1970—taking into account the continual increase in "holding power" of high schools—also, from replies that nearly 50,000 high school seniors of 1956 gave about their plans for continuing education[2].

Both public and private high schools were selected for this study by the Bureau of Examinations and Testing, State Education Department, in such a way as to obtain adequate representation within each county and Economic Area. All seniors in each participating high school provided the desired information about postsecondary plans and, in addition, took the New York State Scholastic Ability Test. The results of this test gave a single measure of ability for all of the seniors tested.

Information about the extent of college facilities for full-time undergraduate students was obtained from college officials—through personal interview—since the spring of 1956. Some of the college officials have continued to restudy their future plans and have made revisions—both

[1] Detailed statements are shown in appendix B.
[2] The information schedule is reproduced in appendix C.

TABLE 4

Summary of economic factors, in each economic area, that are related to college attendance

AREA	POP. GROWTH 1940–50	PERCENTAGE OF POP. UNDER AGE 18	PROPORTION OF POPULATION WHO ARE HIGH SCHOOL GRADUATES	PROPORTION OF LABOR FORCE ENGAGED IN MFG.	PER CAPITA INCOME 1954	ESTIMATED FAMILY INCOME 1954
Binghamton	10%	30%	35%	35%	$1,597	$3,600
Capital District	10	27	37	32	1,854	4,000
Elmira	17	30	39.3	31	1,490	3,[illegible]0
Mid-Hudson	9	26	31	25	1,631	4,[illegible]
Mohawk Valley	6	28	30	43	1,646	3,[illegible]
N. Y. Metropolitan						
Nassau	65	30	51	23	2,333	5,000
Suffolk	40	26	38	18	1,600	4,000
Rockland	20	28	42	30	1,730	4,000
Westchester	9	27	50	24	2,876	5,000
New York City	6	24	35	28	2,386	4,000
Niagara Frontier	14	28	32	40	2,054	4,100
Northern	3	33	31	22	1,226	3,000
Rochester	19	28	36	38	1,978	4,000
Southwest Gateway	9	30	35	35	1,455	3,600
Syracuse	13	29	38	36	1,756	4,000
Upstate average	15	28	38	32	1,773	
State Average	10	26	36	30	2,163	

Note: In some of the areas there are important variations among counties in the items shown above, see appendix E for these details.

downward and upward—in the extent of facilities planned for the next 15 years. Undoubtedly, additional changes will be made at frequent periods. Therefore, it is imperative that the whole situation in higher education be reappraised by 1960 at least.

The plans for expansion of all units of State University of New York were drawn from the Five Year Capital Construction Program, prepared late in 1955. The total full-time undergraduate enrollment in 1954-55, was 21,654, excluding medicine. Plans for the expansion of colleges and institutes of State University would provide facilities for 33,550 full-time undergraduate students excluding medicine. Most of this expansion is planned by 1960, although in a few of the colleges the maximum as planned thus far will not be reached until after 1960. The fact that State University planning has not been projected generally beyond 1960 shows up in some of the differences between estimated need and projected facilities for 1965 and 1970.

Plan of this Report

The information to be presented has been organized into four parts:

In Part I, there is an analysis of the replies obtained from the nearly 50,000 high school seniors of 1956, with respect to their postsecondary plans. This information has a direct bearing upon the need for higher education.

Part II contains information obtained from college officials about the present extent of facilities to accommodate students and their projected plans for 1960, 1965 and 1970.

In Part III, estimates of need for higher education are matched against projected college facilities.

Part IV gives a brief summary.

A very brief summary of factual information, a set of premises that were formulated to serve as guides for the future development of higher education, and the recommendations adopted by the Board of Regents of The University of the State of New York on December 21, 1956, have been published separately by the State Education Department[1].

[1] Statement and Recommendations by the Board of Regents for Meeting the Needs in Higher Education in New York State, Adopted December 21, 1956, The University of the State of New York, the State Education Department, Albany, 1957. The premises are reproduced here in appendix E.

PART I

NEED FOR HIGHER EDUCATION

One of the important sources of information about the need for higher education is the extent to which high school graduates plan to, and do, continue their education. In order to obtain up-to-date statistics about the plans of high school seniors, nearly 50,000 were queried shortly before graduation in 1956.

The last previous similar information obtained in New York State was limited to 11 counties, and was in 1953. A followup of a sample of the 1953 respondents revealed that 87 percent had registered in the college that was named as the most likely one at the time of graduation. It is fairly safe to assume, therefore, that college plans reported by high school seniors in June are quite fully carried out in the fall.

The 1956 respondents amounted to 42 percent of the high school graduates in the State[1]. The respondents from New York City[2] amounted to 16 percent of the high school graduates; in the rest of the State (upstate) the respondents equaled 64 percent of the graduates.

Because of the fact that the representation from New York City is proportionately so much less than that from the rest of New York State (upstate), there are technical difficulties involved in combining the two sets of information. It is not known, for example, how adequately these 16 percent of the New York City high school seniors represent the entire group. For this reason no attempt has been made to combine the New York City figures with those from upstate.

The responses from New York City seniors parallel those from upstate seniors in most respects. Therefore, in presenting the characteristics of the seniors, analysis will be confined to the upstate group but any important differences for New York City will be mentioned.

Questions answered by the high school seniors provide information about their fathers' occupations and their plans for continuing education or the main reason for not continuing. The test scores obtained provide a basis for evaluating plans of seniors in terms of their scholastic ability.

Characteristics of Seniors Planning To Continue Education

Economic Areas

The variations among different Economic Areas in the percentages of seniors who planned to continue their education range from 46 percent

[1] All tables referred to in this section will be found in appendix D. See Table 1.

[2] It was necessary to apply a constant weighting factor to the replies received from New York City in order to obtain a correct balance between private and public school seniors.

in the Elmira Area to 64 percent in Westchester County. These variations are accounted for quite largely by the differences from area to area in the percentage of seniors who indicated a preference for four-year colleges. (Table 2.)[1]

There is a plausible explanation for some of these variations among the areas. In the New York Metropolitan Area, for example, Westchester County has the highest per capita income of all counties in the State. Likewise, Nassau County has a comparatively high income level. Even without extensive local college opportunities the percentages of seniors in these counties who planned to continue their education exceed the rates of any other single county. New York City has both comparatively high per capita income and extensive college opportunities—with the College of the City of New York in the low cost category—hence the rate of college attendance is approximately as high as in Nassau and Westchester Counties.

The location of the college chosen by the high school seniors reflects both the nature and extent of local college opportunities and the per capita wealth which in turn affects the desire to attend high cost colleges either in New York State or in other states. (Table 3)

In Rockland County, for example, only 9 percent of the seniors planned to attend a local college—meaning one within daily travel distance. There is only one college in Rockland County and it is a religious institution.

In contrast to Rockland County, 49 percent of the New York City seniors indicated that they planned to attend a local college.

For a variety of reasons comparatively large percentages of seniors planned to attend colleges in New York State, but beyond daily travel distance, from the Mid-Hudson Area, Rockland County, the Northern Area, the Binghamton Area, the Mohawk Valley Area and the Southwest Gateway. This situation could possibly point toward the need for more extensive or different college facilities in some of these areas.

Westchester and Nassau County seniors stood at the top of the list in the percentage planning to leave New York State for college. As previously indicated, both per capita wealth and the extent of local college opportunities are reflected in these percentages, 29 and 24 respectively.

Occupation of Fathers

The occupation of the fathers of seniors, reflecting somewhat a socio-economic status, is related to scholastic ability score. (Table 4). A significantly larger percentage of seniors whose fathers were in professional and executive positions achieved high test scores than seniors in any

[1] See appendix D for all tables referred to in this section.

other occupational group. This situation is reflected in the high percentage of seniors with "professional" fathers who planned to attend college. (Table 5)

The relationship between family occupational status, scholastic ability and college plans of seniors is quite consistent. (Table 6). Occupational status appears to be more closely related to the decision to attend college than scholastic ability although both factors are important. In the 1953 study of high school seniors, in which family income rather than occupational status was obtained, it was concluded that "family income exerts a greater influence upon the decision to pursue higher education than does the ability of high school graduates as indicated by I. Q., although both factors are important." [1]

The consistency of relationships between occupational status and college plans of seniors on one hand, and with family income and college plans on the other hand, further demonstrates this relationship between occupational status and family income.

Seniors with "professional" fathers tend to choose four-year colleges proportionately more than do seniors from other occupational groups. Boys choose four-year colleges in a greater proportion than do girls. Girls choose nondegree programs, such as business schools and hospital nursing schools, in a greater proportion than do boys. (Tables 7–11)

A larger percentage of both boys and girls from "professional" homes choose to enter liberal arts than do seniors from other occupational groups. The occupation of fathers seems to have no relationship to a boy's choice of engineering, and only a very slight relationship with the choice of business subjects. "Professional" families contribute a significantly smaller percentage of boys to the teacher education field than do the skilled, semi-skilled and unskilled occupational families.

Girls of nonprofessional parentage, in contrast with those from "professional" homes, tended to choose nursing and business subjects. There is only a slight relationship between father's occupation and choice of teacher education on the part of girls in the areas outside the New York Metropolitan Area. In the New York Metropolitan Area (excluding New York City), however, girls from "professional" homes chose teacher education in a significantly smaller proportion than girls from families in other occupational groups. (Tables 12–14)

There is a strong positive relationship between the choice by both boys and girls of college in another state and the "professional" family in contrast with families in other occupational groups. This relationship

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[1] *Crucial Questions about Higher Education*, State University of New York, 1955, p. 23.

is more pronounced in the Metropolitan Area *around* New York City than in the other areas of New York State (excluding New York City). (Tables 15–18)

Seniors from professional homes tended to choose private colleges proportionately more than other seniors and, conversely, the seniors from other than professional homes tended to choose public colleges proportionately more than seniors from professional homes. This relationship is also more pronounced in the Metropolitan Area *around* New York City than in the rest of New York State (excepting New York City). (Tables 19 and 20)

Scholastic Ability

A high score on the New York State Scholastic Ability Test bears a very significant positive relationship to the decision of seniors to attend some kind of postsecondary institution, as shown in chart III. (Tables 21 and 22). Likewise, a high test score is associated with the choice of a private college more than with the choice of a public college (tables 23 and 24); with leaving New York State more than attending a local college as shown in chart IV (table 25), excepting in New York City where a high test score is associated with the choice of a local college (table 26); with the choice of a four-year degree college over any other type of institution as shown in chart V (tables 27 and 28); and especially with a desire to pursue liberal arts and engineering in comparison with other large fields of study (tables 29, 30 and 31).

Various Relationships

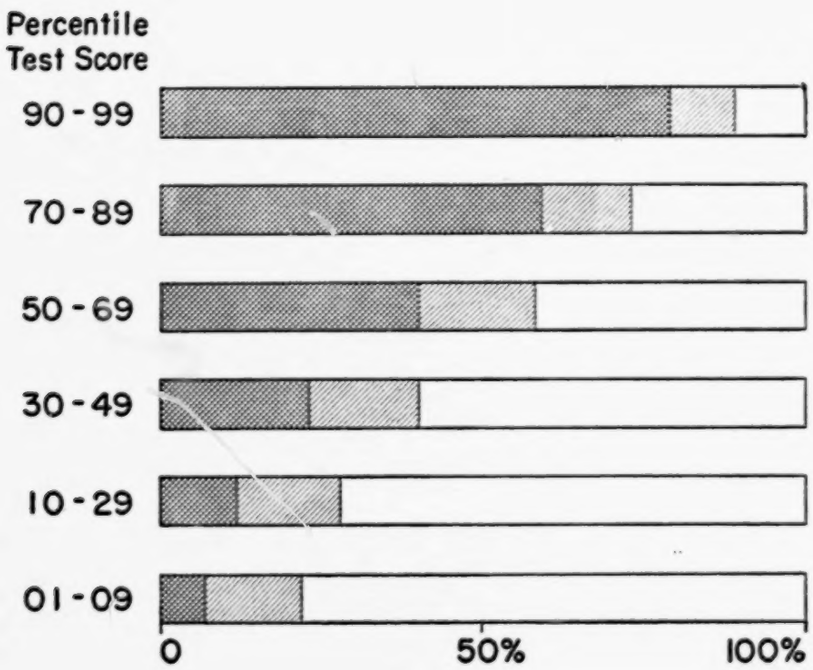
The processes of machine tabulation facilitate relating the answers obtained to each question to the answers given to all other questions. In this instance, these interrelationships include the sources of support and kinds of control of colleges (private or public), types of institutions (four-year or two-year), chosen fields of study, and locations of colleges.

Seniors who chose a four-year college tended to choose a private college; excepting in New York City where those who chose a two-year college tended to choose a public college. (Tables 32 and 33)

The choices of subject fields in either a public or private institution varied both with the fields and location in New York State. Upstate seniors choosing business subjects preferred a private college; New York City seniors preferred a public college. In liberal arts the upstate seniors preferred a private college; New York City seniors were evenly divided between public and private. Seniors throughout the State tended to choose a private college for nursing. Conversely, those who chose teacher education indicated a strong preference for a public college.

Chart III

Relationship between the Ability of High School Graduates and their Plans for further Education



LEGEND

- Definitely Going
- Probably Going
- Not Going

SOURCE:
40,971 Upstate Graduates

TEST:
N. Y. S. S. A. T.

Chart IV

Relationship between the Ability of High School Students and Where They Plan to Continue Their Education

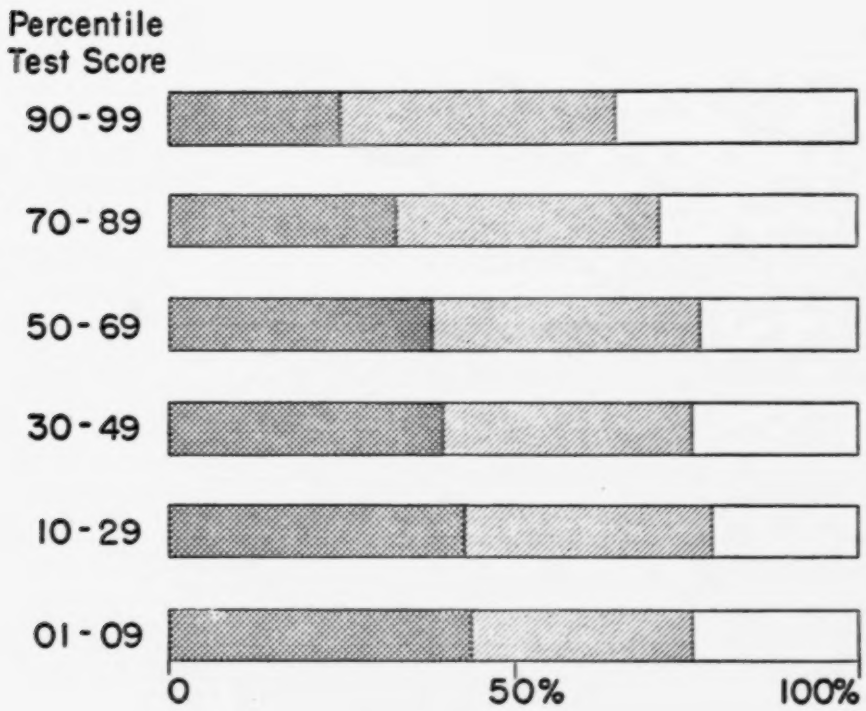
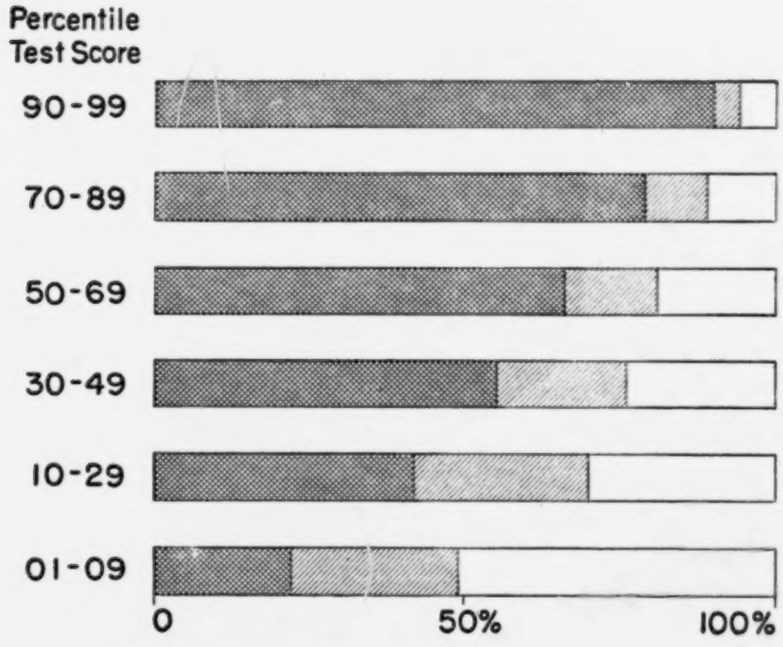


Chart V

Relationship between the Ability of High School Graduates and the Type of Institution Selected



LEGEND

- Four Year Degree
- Two Year Degree
- All Others

(Tables 34 and 35). The New York City seniors who chose engineering were evenly divided between public and private colleges; upstate seniors tended to prefer private colleges, (Table 36). These choices, as expressed by seniors, undoubtedly reflect both the existence and availability of college opportunities of different kinds.

Seniors living in upstate New York whose choice was a public college tended to stay within the State, but more planned to leave their home communities than to attend a local college. Nearly all of the New York City seniors who chose a public college expected to remain in the city. The upstate seniors who preferred a private college were almost equally divided as to location—local, elsewhere in the State and outside the State. New York City seniors who preferred a private college tended to remain in the city with more leaving the State than attending beyond commuting distance in the State. (Tables 37 and 38)

Upstate seniors who preferred a four-year college tended to choose a college away from home—elsewhere in New York State or in another state more than one in their local area as shown in chart VI; the New York City seniors tended to remain in the city. Seniors making the choice of a two-year college tended to remain within their local area. (Tables 39 and 40)

Both upstate and New York City seniors choosing the various fields of study listed—with two exceptions—tended to remain either in their local area or in New York State more than to leave the State, excepting those living upstate who had a preference for liberal arts. This last group including Nassau and Westchester County seniors showed a strong tendency to leave New York State for college. The second exception is the upstate seniors who chose engineering—a larger percentage planned to leave the State than to attend either a local college or a more distant college within the State. (Tables 41, 42 and 43)

By far the largest proportion of seniors choosing each of the fields of study listed planned to attend a four-year college excepting business subjects and nursing. Two-year colleges and nondegree schools attracted sizable proportions of the seniors who chose these two fields. (Tables 44, 45 and 46)

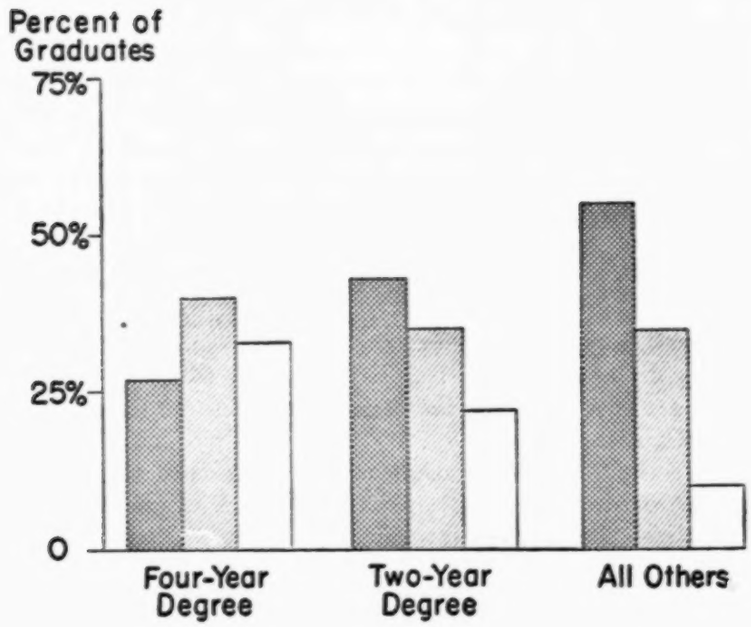
Characteristics of Seniors Not Planning To Continue Education

Scholastic Ability

A considerable amount of publicity has been given in professional publications to the loss of talent caused by youth with college ability who fail to continue their education beyond high school. In New York State, 46 percent of the upstate seniors were stopping at the end of high school; 37 percent in New York City, in 1956.

Chart VI

Relationship between the Type of Institutions Selected by High School Graduates and Its Location



LEGEND

- In Local Area
- Elsewhere in New York State
- Outside New York State

Of the upstate seniors who were not continuing education, 37 percent stood above the median on the New York State Scholastic Ability test; 45 percent were above the median in New York City as shown in chart VII. (Tables 47 and 48)

Reasons

All seniors who did not plan to continue education were asked to check the main reason in a list of items. Both in upstate New York and in New York City 17 percent of the reasons fall into the financial category. Lack of interest, however, accounts for the largest percentages: 30 percent of the upstate group, and 45 percent of the New York group. (Tables 49 and 50)

Ability—Reasons—Father's Occupation

Classification of the information about seniors into groups to show scholastic ability, father's occupation and reasons for not continuing education shows some significant relationships.

Of the seniors in the top fifth of scores on scholastic ability who were not continuing their education, a larger percentage of girls than of boys expressed lack of interest as their main reason for stopping with high school. Lack of interest, moreover, is less prevalent in the "professional" family group than in each of the other occupational groups.

Economic factors seem to affect girls in this high ability group more than they do boys, and also, both boys and girls from "professional" families are affected less by economic factors than are seniors in the other occupational groups.

Seniors who were in the second and third fifths on scholastic ability are proportionately much more affected by a lack of interest in continuing their education than the seniors in the top fifth on ability.

There is a correspondingly smaller proportion of seniors of lesser scholastic ability affected by economic factors than in the high ability group. (Table 51)

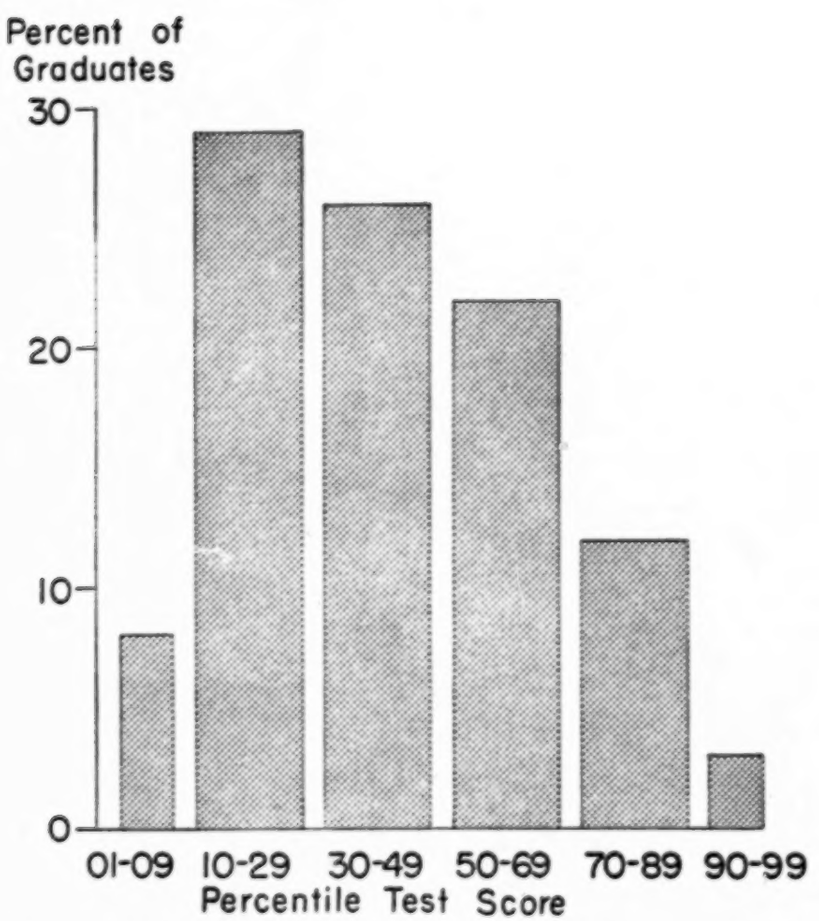
Implications

Information obtained about the need for higher education from high school seniors suggests several points that merit consideration.

1. Among the geographic areas there are variations in the rate of high school seniors who plan to continue their education that are related to per capita wealth and also to the availability of local college opportunities. The logical conclusion to be drawn is that in every local community college opportunities should be available in as many fields of study and covering as many years as the size of the population will justify. Local college opportunities make it possible for students

Chart VII

Ability of High School Graduates Not Planning to Continue their Education



who so desire to attend while living at home, thus obviating the extra cost of board and room and also the cost to the institution or the State of providing dormitory facilities. It should be recognized, however,

that living away from home to attend college has many beneficial aspects and also that local colleges can hardly be placed within commuting distance of all youth in the State.

2. The relationships between socioeconomic status, scholastic ability, and failure to continue education, on the part of high school seniors point toward the necessity for early identification and motivation of youth with college ability. Furthermore, the need for financial assistance to students that is geared to economic need is a logical conclusion to be drawn from the facts presented.

3. The loss of talent that occurs when highly capable youth end their education with high school is substantial. About one-fifth of all seniors stood above the median of scholastic ability and quit school. It is true, however, that many of the boys in this group planned to enter the armed forces, so that it is reasonable to expect that some of them will pursue further education at a later date. It is logical to conclude that benefit would result from post-military educational stimuli of the kind instituted following World War II and the Korean activity.

PART II

FACILITIES FOR HIGHER EDUCATION

Colleges and universities in New York State have estimated the extent of their facilities, present and future, in 1943, 1946, 1947, 1950, 1955 and 1956. The question of future plans is, therefore, not a new one. Nevertheless, it is most difficult for the executive officer of any higher institution, either private or public, to indicate future plans for expansion beyond a few years. All college executives are bound by the policy decisions of their governing boards. Of course the question is easily answered if the policy dictates no expansion. But if expansion in size is contemplated, the private college executive is uncertain about the amount and timing of necessary funds from benefactors of different kinds, whereas, the public college official cannot predict accurately such action as may be taken by governmental agencies even one year in advance. Planning in advance on paper for 5, 10 and 15 years, therefore, falls increasingly into the area of hopeful speculation about what may actually come to pass.

On the basis of past experience it was decided to obtain the information needed for this study by personal visit to each college rather than by questionnaire. This procedure made it possible to learn about the various complications that sometimes stand in the path of development, e. g., lack of laboratory space, lack of dormitories, lack of sufficient chapel space. In spite of the difficulties involved it is thought that the college plans which were finally recorded represent, as of 1956, fairly realistic goals for accomplishment—at least through 1960.

Various college policies were discussed with the executive officers regarding the probability of their continuance or change. For example, the policy of a college serving largely a local clientele or the desire to attract a national representation in the student body has a direct bearing upon the need for additional local facilities. Likewise, a college may enroll only boys, or girls, or both, and thereby affect the local need. Changes in these policies, or their continuance, affects the extent of facilities that may be needed to serve a local area. Most of the college executives interviewed expressed the view that as the number of applicants becomes greater their colleges will become more selective in screening applicants.

Early in the planning stages of this study it was decided to place initial emphasis upon facilities designated for full-time undergraduate students. It was recognized that part-time students are increasing rapidly in number and that part-time programs may be used more and more

to offset the need for facilities. But it is also well known that college facilities which will accommodate 1,000 full-time students will also accommodate 2,000 to 3,000 part-time students.

There was further recognition of the importance of facilities for graduate programs because they constitute the means for preparing the extra large number of additional faculty members who will be needed. However, it was decided that undergraduate facilities should be given top priority inasmuch as both areas could not easily be studied simultaneously.

A new feature was incorporated in the planning for this study which had not been used previously in New York State. The idea was proposed and readily accepted by the colleges that during October preliminary facts about both need and facilities would be presented to the college executive officers in a conference in each Economic Area. Thus, 12 area conferences[1] were held in various colleges. These were followed by a statewide conference on engineering. One purpose of the conferences was to present all of the facts then available, also to obtain corrections in estimates of college facilities due either to continued college planning or to a misinterpretation of information, and furthermore to discuss possible means by which adequate opportunities for college students could be provided.

A preliminary set of assumptions was drafted to serve as guides in the discussion about the future of higher education. Following some revision, which was a result of the discussion and reaction, the assumptions became premises[2] and were adopted by the Board of Regents on December 21, 1956.

The discussions that took place in the 13 conferences were most helpful to the representatives of the State Education Department. Although sincere differences of opinion were expressed with regard to the solutions of many problems, it is fair to conclude that in most instances the atmosphere was cleared of ambiguity. One of the most fruitful results of the conferences was the stimulus that was given to college executives to review and refine their future plans. There is, therefore, a fairly solid base as of 1956 from which a reappraisal of plans may be made at an appropriate time in the next few years.

The estimates of total facilities for full-time undergraduates provided by the colleges are shown in appendix F. These estimates have been classified according to two-year and four-year colleges. Estimates of facilities for engineering have been dealt with separately because of the critical nature of the manpower situation in this field.

[1] Two conferences were held in the New York Metropolitan Area.
[2] These statements are reproduced here in appendix E.

It is most difficult to separate the facilities of some higher institutions into fields of study. For example, students can and do obtain preparation for teaching in liberal arts colleges as well as in teachers colleges. It would be almost impossible to state the proportion of liberal arts facilities that might be made available for teacher preparation in a given college by 1960. The breakdown of facilities by subject fields, excepting engineering, for each of the five-year intervals prior to 1970 could be interesting but it would be more or less an academic exercise.

In the sections which follow, the facilities shown in appendix F have been reclassified according to program; two-year technical-terminal programs, four-year programs, and engineering programs. Both two-year and four-year programs are offered by some four-year institutions. Both two-year terminal programs and the first two years of four-year programs are offered by some two-year institutions. Thus, the figures used to describe programs in the next sections do not agree with the figures given for institutions in appendix F. It has been difficult in some cases for college executive officers to separate their total facilities into parts—one part for two-year programs and the remainder for four-year programs. In practice, the actual division is flexible and may change from year to year.

The estimates of total facilities for full-time undergraduates that are expected to be available by 1960 appear to be reasonably sound. But estimates for later periods—1965 and 1970—are obviously less assured of realization. Likewise, estimates for broad subject fields, excepting engineering, are not clear cut because of the overlapping or multiple use of facilities and should be considered as rough guides for future planning.

PART III

NEEDS AND FACILITIES

The material contained in this section of the report was presented previously in three staff reports, the first two of which were for the consideration of the Board of Regents prior to formulating the recommendations which were adopted on December 21, 1956. Each of these reports contained a successive revision of estimates of facilities provided by the colleges. Staff Report No. 3 is a revision of No. 2 and contains changes in the estimated facilities for engineering as of December 20, 1956. It was prepared for limited distribution pending the completion of this printed report.

In this section, estimates of need are brought into focus against the estimates of facilities. The difference between estimates of need and estimated facilities represents the extent of facilities for which plans should be made—providing that the estimates of need are realistic, and also that the estimates of future facilities are realized.

Two-Year Technical Programs

As noted previously, two-year collegiate programs may be "transfer," leading to a baccalaureate degree in another institution or "terminal," preparing for immediate employment in one of several types of work. This section is concerned exclusively with what is generally thought of as the two-year technical-terminal program.

The programs classified as two-year technical are provided by all six State University Agricultural and Technical Institutes, all 11 community colleges, Rochester Institute of Technology and a few other private institutions. Most of the programs cover two years' duration.

Four of the community colleges provide programs that are designed for transfer to other colleges. Rochester Institute of Technology enrolls about 30 percent of its two-year students in third and fourth year courses. A number of two-year colleges are classified as junior colleges, some of which are religious seminaries, and offer programs that fall generally into the liberal arts field. All of the facilities in two-year colleges that fall into the liberal arts classification, and the upper-division facilities of Rochester Institute of Technology, have been omitted from this discussion of facilities for two-year technical programs.

As high schools continue to graduate a larger percentage of youth, each group of graduates becomes more diverse in ability and interests. Colleges, thus, are faced with an increasingly heterogeneous body of applicants. Two-year technical programs provide one way of accommodating some of the graduates who desire to continue their education.

In some areas of the State it may prove to be economical to provide both two years of technical education and two years of general education in the same college. In other areas it may be economical to provide the two fields separately. A decision will depend upon the pattern of existing institutions and the extent of need for facilities in each field.

The decision about what percentage of high school graduates to use as a measure of need for two-year technical facilities is partly a matter of judgment. Several factors serve as guides in making the choice.

The following points are made in support of using 16 percent of high school graduates as a measure of need for two-year technical programs.

1. Orange County, prior to the establishment of Orange County Community College, had one of the lowest percentages of high school graduates continuing their education of all counties in the State. Now, Orange County Community College is the only public college readily available to local youth. It offers both a technical and a liberal arts program. In 1954, this college enrolled 17 percent of the high school graduates of the County; in 1955, the proportion was 22.4 percent.

2. In 1953, 7.2 percent of the high school graduates of eleven counties planned to enter two-year degree colleges. In 1956, between 7 and 10 percent of the high school seniors queried in each Economic Area indicated that they planned to enter two-year degree colleges this fall. The trend of the percentage of high school graduates planning to enter two-year degree colleges is definitely increasing. Because it is a well-known fact that most of the colleges that provide two-year technical programs do not have sufficient facilities to accommodate all of their qualified applicants, the percentages cited (about 7 to 10 percent) cannot be used as an adequate indication of need. The percentage response of high school seniors is affected both by the limited facilities and the newness of the programs in New York State.

The fall 1955 full-time enrollment and the estimate of facilities is shown in table 5. In all but two of the Economic Areas having two-year technical programs, the number of students was at 90 percent or more of the facilities in 1955. These figures indicate that in all but two of the areas, the number of students enrolled approximated the extent of facilities available.

In the Mohawk Valley Economic Area, there are large numbers of high school graduates somewhat removed from the Mohawk Valley Technical Institute in Utica, e. g., in Amsterdam, Johnstown, Gloversville and Scotia, and there are smaller numbers in the large geographical part of the area outside of these urban centers.

The Mid-Hudson Economic Area is divided by the Hudson River which makes all of the youth east of the river, including those in Pough-

keepsie and Beacon, relatively isolated from Orange County Community College.

3. Most persons who have studied the need for technicians in relation to the need for engineers have come to the conclusion that several technicians are needed for each engineer. The ratio has been placed at 4 or 5 to 1. Thus, with the engineering colleges of New York State enrolling freshmen at the rate of about four per hundred high school graduates in the State in 1955, it would seem justifiable to assume that 16 percent of the high school graduates should seek technical education if adequate facilities were available.

TABLE 5

Total full-time enrollment and facilities
two-year technical programs, by Economic Areas

Fall 1955

ECONOMIC AREA	ENROLLMENT	FACILITIES	PERCENT ENROLLMENT IS OF FACILITIES
Binghamton Area	636	692	92
Capital District Area	839	864	97
Elmira Area	0	0	
Mid-Hudson Area	249	360	69
Mohawk Valley Area	412	700	59
New York Metropolitan Area			
New York City	2,844	2,766	103
Nassau County	1,412	1,550	91
Suffolk County	0	0	
Rockland County	0	0	
Westchester County	703	735	96
Niagara Frontier Area	790	875	90
Northern Area	721	745	97
Rochester Area	1,130	1,205	94
Southwest Gateway Area	1,225	1,280	96
Syracuse Area	594	640	93
State	11,555	12,412	93

4. To base the estimate of need for technicians on the ratio with engineers has the effect of understating the need for technical programs if the ratio of 4 to 1 for engineers is correct. This is true because the technical programs offered in New York Colleges now prepare technicians for many other fields beside Engineering, e. g., in both business and health fields.

5. Another important consideration in making an estimate of the facilities that may be needed for two-year technical education is the demand of employers for technical graduates. Business, industry and

TABLE 6

Estimate of need and facilities,
two-year technical programs, New York State

1955-70

ECONOMIC AREA	1955	1960	1965	1970
Binghamton Area				
Need	807	951	1,583	1,600
Facilities	692	1,305	1,310	1,310
Difference	— 115	+ 354	— 273	— 290
Capital District Area				
Need	1,479	2,131	3,176	3,581
Facilities	864	1,650	1,950	2,450
Difference	— 615	— 481	— 1,226	— 1,131
Elmira Area				
Need	627	918	1,487	1,543
Facilities	0	0	0	0
Difference	— 627	— 918	— 1,487	— 1,543
Mid-Hudson Area				
Need	1,186	1,482	2,278	2,393
Facilities	360	450	675	675
Difference	— 826	— 1,032	— 1,603	— 1,718
Mohawk Valley Area				
Need	877	1,205	1,832	1,909
Facilities	700	1,250	1,250	1,250
Difference	— 177	+ 45	— 582	— 659
New York Metropolitan Area				
New York City				
Need	13,694	18,615	24,706	23,006
Facilities	2,766	7,110	7,110	8,560
Difference	—10,928	— 11,505	— 17,596	— 14,446
Nassau County				
Need	1,909	3,407	4,633	7,034
Facilities	1,550	2,500	2,500	2,500
Difference	— 359	— 907	— 2,133	— 4,534
Suffolk County				
Need	768	1,072	1,532	2,049
Facilities	0	0	0	0
Difference	— 768	— 1,072	— 1,532	— 2,049
Rockland County				
Need	171	402	594	645
Facilities	0	0	0	0
Difference	— 171	— 402	— 594	— 645
Westchester County				
Need	1,737	2,199	3,206	3,381
Facilities	735	1,720	2,810	3,880
Difference	— 1,002	— 479	— 396	+ 499

TABLE 6 *continued*

ECONOMIC AREA	1955	1960	1965	1970
Niagara Frontier Area				
Need	2,444	3,762	5,029	5,871
Facilities	875	2,055	2,500	3,000
Difference	— 1,569	— 1,707	— 2,529	— 2,871
Northern Area				
Need	799	1,034	1,548	1,593
Facilities	745	925	1,005	1,005
Difference	— 54	— 109	— 543	— 588
Rochester Area				
Need	1,734	2,515	3,749	4,185
Facilities	1,700	2,000	2,300	2,400
Difference	— 34	— 515	— 1,449	— 1,785
Southwest Gateway				
Need	662	836	1,299	1,320
Facilities	1,280	1,620	1,620	1,620
Difference	+ 618	+ 784	+ 321	+ 300
Syracuse Area				
Need	1,285	1,917	2,822	3,294
Facilities	640	940	940	940
Difference	— 645	— 977	— 1,882	— 2,354
State				
Need	30,179	42,446	59,474	63,404
Facilities	12,907	23,575	25,970	29,590
Difference	— 17,272	— 18,871	— 33,504	— 33,814

professional persons have been seeking increasingly larger numbers of technical graduates. Even though the future demand in this field is difficult to quantify, the trend is toward a larger proportion of the labor force in subprofessional occupations.

The estimate of need for two-year technical facilities based upon 16 percent of the high school graduates may seem too low or too high. In either case, if a smaller or larger percentage were used, the estimates of need would be proportionately less or greater than those to be shown. A constant percentage through 1970 is used here, without allowing for a possible increase due to a higher percentage of high school graduates continuing their education, and also for a greater demand for technical education because of such other factors as: the cost of a four-year college education; the possibility of living at home to save some expense, and the possible increased selectivity of four-year colleges.

The estimates of need and two-year technical facilities are shown in table 6. The difference between need and facilities indicates either a surplus of facilities or a shortage. Need is computed as 16 percent of high school graduates and a freshman class is computed as 61 percent of total two-year enrollment.

The figures by Economic Area indicate an apparent surplus of facilities in the Southwest Gateway. However, reference to table 5 shows that the combined enrollment in the Agricultural and Technical Institute at Alfred and Jamestown Community College was 96 percent of the facilities in 1955. The Institute attracts many of its students from other areas of the State. Total facilities are shown disregarding the migration pattern of students.

Several of the areas show a greater shortage of facilities for 1955 than does Nassau County. However, adding the shortage of Nassau County to that of Suffolk County brings the 1955 shortage to third position; being exceeded only by New York City and the Niagara Frontier.

Nassau County alone, however, because of the very large increase in high school graduates, and no firmly documented expansion of facilities after 1960, shows the greatest numerical shortage of all areas for 1970 excepting New York City.

With the shortage of Suffolk County added to that of Nassau County for 1970, the combined shortage is for 6,500 students in technical programs. This figure amounts to nearly a fifth of the overall shortage in the State for 1970.

Evidence will be seen in table 6, of the plans for the expansion of technical facilities in a number of the Economic Areas. In several areas, however, the planned expansion does not match the projected increase in high school graduates.

Following is a recapitulation of the additional facilities needed in two-year technical fields.

New York City, Nassau-Suffolk Counties—Both the initial and projected shortage of facilities indicate urgent action.

The other areas fall into the following order on projected shortage of facilities:

Niagara Frontier Area
Syracuse Area
Rochester Area
Mid-Hudson Area
Capital District Area
Rockland County

State University of New York reports the possible establishment of locally-sponsored community colleges in Dutchess County and in Rockland County. Subsequent to gathering statistical information about college facilities for this study, a community college has been approved for Corning in the Elmira Area. In addition, the Regents have approved the proposal of the State University of New York for the establishment

of two others on Long Island and the conversion of Farmingdale into a community college. Finally, for some time there has been local demand for a community college in the Bronx.

Four-Year Degree Programs

Four-year college programs in New York State are provided in *87* private colleges and universities and in *19* units of State University of New York. As stated in the introductory section of this report, these institutions were visited in the spring of 1956 and, in each institution, responsible officials were asked to report their present student capacity and their planned extensions of capacity in the years to 1970.[1] No arbitrary standard was imposed on the institutions. Each reported present and proposed capacity in terms of its own standard of operations. Each, however, was asked to "document" its plans for expansion in terms of new facilities to be added or of plans for more complete utilization of existing facilities. The outcome of these visits and their followup shows that the colleges had facilities in 1955 for 166,000 full-time undergraduate students. They planned by 1970 to have facilities for 235,000 students, an increase of 41 percent. Following are two statewide estimates of the growth in college enrollments and a comparison between them and proposed college facilities to determine whether or not the planned expansion is adequate and, if not, the difference between estimated need and facilities, i. e., the need for facilities beyond those planned.

The first measure of need is based on the full-time undergraduate enrollment in all four-year colleges of 141,000 in 1955. This figure was extended in proportion to the statewide percentage increase in high school graduates (table 2). Shown in table 7, this method of projection indicates that college enrollments will increase from 141,000 in 1955 to 297,000 in 1970. A comparison of these estimates to existing and planned facilities shows that soon after 1960 the facilities of the colleges and universities will be taxed to their full limit and that by 1970 there will be a need for additional facilities sufficient to accommodate 62,000 students.

The second statewide estimate is based on the college plans of nearly 50,000 high school graduates as reported in June 1956, very close to graduation and at a time when most knew whether or not their applications to colleges had been accepted. Their plans, therefore, were regarded as highly reliable. Forty percent of these New York State graduates planned to enter four-year colleges. With this percentage and

[1] State University of New York, excepting Harpur College for 1965, reported plans for new facilities only to 1960. Planned growth after 1960 reflects largely the plans of private institutions.

TABLE 7

Estimated need for full-time undergraduate facilities based on 1955 actual enrollment, and existing and expanded full-time four-year facilities in four-year colleges, 1955–70

YEAR	ESTIMATED NUMBER OF FULL-TIME UNDERGRADUATE STUDENTS IN N. Y. COLLEGES	ESTIMATED FULL-TIME UNDERGRADUATE FACILITIES IN N. Y. STATE	EXCESS OR SHORTAGE OF FACILITIES
1955	141,000*	166,000	+25,000
1960	199,000	202,000	+ 3,000
1965	279,000	221,000	−61,000
1970	297,000	235,000	−62,000

* This enrollment figure does not include four-year programs that do not admit students directly from high school, and two-year programs operated by four-year institutions. This enrollment figure is, therefore, not comparable with published enrollment statistics. The estimate of facilities is consistent in definition with the enrollment figure. The apparent surplus of facilities for 1955 is "real" in the light of the estimates of facilities given by the colleges. More than half of the apparent surplus is attributable to four institutions.

the estimated number of graduates in table 1, estimates were made of college entrants in 1960, 1965 and 1970. An analysis of the enrollment of 40 colleges indicates that total undergraduate enrollment is 2.85 times freshman enrollments. These relationships provide the bases of the second estimate of college enrollments shown in table 8.[1]

Estimates based on plans of high school graduates indicate the college enrollments will increase from 132,000 in 1955 to 274,000 in 1970. This is in reasonable agreement with the first estimate above, the differences between the two projections being approximately 8 percent. The second estimate corroborates the first, also, in showing that, between 1960 and 1965, the facilities of the colleges and universities will begin to fall short of need, the unmet need, by this method of estimation, growing to 39,000 in 1970.

The two estimates of statewide need given above are equally acceptable. To be conservative, the second estimate, showing a shortage of facilities sufficient to accommodate 39,000 students, is accepted as the more realistic picture of the situation. However, if the first estimate of need (table 7) proves to be more realistic than the second, the extent

[1] This estimate ignores the fact that many high school graduates plan to enter colleges in other states. Previous studies show outward migration to be greater than inward migration. It is a fact, however, that the large State universities of the Midwest and South, which provided New York State students with opportunity for low cost education, are already beginning to close their doors to out-of-state students. It is not unreasonable to suppose, therefore, that in the years ahead, outward and inward migration may not be significantly different.

of facilities needed will be greater than that shown in table 8 and in table 14.

TABLE 8

Estimated need for full-time undergraduate facilities, based on plans of high school graduates, and existing and expanded facilities for full-time undergraduates in four-year colleges. 1955–70

YEAR	ESTIMATED NUMBER OF FULL-TIME UNDERGRADUATE STUDENTS FROM NEW YORK STATE	ESTIMATED FULL-TIME UNDERGRADUATE FACILITIES IN NEW YORK STATE	EXCESS OR SHORTAGE OF FACILITIES
1955	132,000[a]	166,000	+34,000
1960	186,000	202,000	+16,000
1965	258,000	221,000	−37,000
1970	274,000	235,000	−39,000

[a] This estimate of enrollment is based upon the percentage of New York State high school seniors who definitely planned to attend college—regardless of the location of the colleges selected. This procedure assumes that in the years ahead the migration of college students to and from New York State will approximately balance. The apparent "surplus" of facilities shown for 1955 should be adjusted by taking into account the net loss of migration from New York to other states. Unfortunately, however, the only migration figures for full-time students are sixteen years old.

One of the key questions to be answered in this report is: What is the evidence, if any, of the need for additional college facilities in Nassau and Suffolk Counties? Because of the factor of migration, both within the State and in and out of the State, it is not possible to apply an easy formula to determine the need for new facilities in any area. The number of students from Nassau and Suffolk Counties expected to be in college attendance is shown in table 9. Shown also are the present and planned facilities in four-year colleges in these counties and the difference between these estimated enrollments and facilities.

TABLE 9

Estimates of college enrollments from Nassau and Suffolk Counties, based on the plans of high school graduates, and existing and expanded facilities for full-time undergraduates in four-year colleges in Nassau and Suffolk Counties. 1955–70

COUNTY	1955	1960	1965	1970
Nassau County				
Estimated enrollments	9,350	16,700	22,650	34,450
Existing and planned facilities	4,797	7,550	9,750	10,550
Difference	−4,553[a]	−9,150	−12,900	−23,900
Suffolk County				
Estimated enrollments	3,760	5,250	7,500	10,050
Existing and planned facilities	305	305	305	305
Difference	−3,455[a]	−4,945	−7,195	−9,745

[a] These figures give a rough measure of present net outward migration.

The proportion of college students who attend local institutions varies greatly with the availability of appropriate facilities. According to the expressed intention of high school graduates, the statewide average of students attending locally was 58 percent. Given available facilities, this percent might be applied to Long Island. If so, the number of students from Nassau and Suffolk County high schools who would be in attendance in local colleges, in 1970, would be 20,000 and 5,800 respectively or a total of 25,800.

Existing local facilities obviously will take care of a portion of these. The estimate of facilities available to local students in 1970 was reported by Nassau and Suffolk County colleges to be 7,380. This leaves an estimated shortage for Nassau and Suffolk County students in the local colleges of approximately 18,420 student places. This estimate does not provide for any increased migration from outside the counties.

It should be noted that, if new facilities accommodating 18,000 students were provided on Long Island, they would meet only a portion of the overall state need for additional facilities for 39,000 students. Approximately 21,000 students would still be unprovided for.

The existing institutions (public and private) in the State have planned to increase their facilities 41 percent by 1970. If they were to accommodate 39,000 additional students, it would become necessary for them to increase their expansion plans to achieve a 65 percent overall increase in facilities.

Four-Year Degree Programs by Economic Areas

The problem of estimating future need for four-year facilities in each Economic Area presents a number of complicating factors. As previously indicated, no formula will provide a satisfactory answer to the problem for each area. The migration of students both within the State, as well as in and out of the State, is one of the most important of the variable factors.

In table 10, it may be seen that the percentage of high school graduates who planned to attend a local college varied from [illegible] percent in Rockland County to 49 percent in New York City. The percentage planning to leave New York State varied from 7 percent in three areas to 29 percent in Westchester County. These facts must be taken into account in passing judgment upon estimates of need for local facilities.

The availability of local college facilities, the general economic level of residents and the extent of motivation of high school graduates toward college play a part in the indication of need for facilities. Each of the factors may apply in opposite ways. In an area with high per capita income, for example, together with a pattern of college attendance out-

side the local area, or in another State, the indication of need would likely be substantial. But because of the migration pattern, the indication of need should not be interpreted as one that should be met through local facilities to the same extent as in an area of significantly lower economic level with a pattern of greater local college attendance.

An indication of the economic factors that have a bearing upon college attendance in each Economic Area is attached in appendix B. There is a possibility that the economic characteristics of some of the Areas may change significantly within the next 15 years thus bringing about a shift in the interpretation of need for local college facilities.

TABLE 10

Percentage distribution of high school graduates according to posthigh school plan, by area and location of college,

1956

ECONOMIC AREA	NUMBER OF HIGH SCH. GRADUATES IN SAMPLE	PERCENTAGE OF HIGH SCHOOL GRADUATES[1]				
		NOT PLANNING TO ATTEND	LOCATION OF COLLEGE			
			AT LOCAL COLLEGE	OTHER COLLEGES IN N.Y.S.	COLLEGES OUTSIDE N.Y.S.	NO DECISION
Binghamton	2,139	52%	15%	24%	7%	2%
Capital District	2,476	51	19	18	10	2
Elmira	1,485	54	13	23	8	2
Mid-Hudson	3,653	48	12	26	13	2
Mohawk Valley	2,147	53	14	24	8	1
New York Metropolitan						
New York City	26,570[a]	37	49	5	7	3
Nassau	4,483	37	23	16	24	*
Suffolk	1,933	50	14	20	15	1
Rockland	325	46	9	25	19	1
Westchester	2,747	36	19	16	29	*
Niagara Frontier	5,503	44	35	10	9	2
Northern	2,160	52	15	25	7	2
Rochester	4,801	47	21	20	10	2
Southwest Gateway	1,774	49	14	24	11	2
Syracuse	2,952	48	22	18	9	2

[1] Rounded percentages may not add to 100.
[a] Adjusted to equate public and private high school graduates in the correct proportion.
* Less than 0.5 percent.

The facilities reported by existing colleges, as planned for 1970, are given in table 11[a]. Listed here are four fields which account for about 75 percent of all facilities for full-time undergraduate students. In some of the areas there are colleges that draw students in substantial numbers both from outside their local areas and from other States. This fact may give the impression of more extensive facilities within the Economic Area than the local demand for facilities would justify. Such a conclusion, however, is not warranted.

The premises[1] that have been stated as guides for considering the problem of providing adequate facilities in higher education include the idea of providing at least the first two years of business and accounting, liberal arts, nursing (collegiate) and teacher education wherever there is a sufficient number of students to support such programs economically. This concept means that a reasonable balance of facilities among these four fields might be sought in each Economic Area.

On a statewide basis, table 11 shows that the four-year facilities as projected to 1970 provide for 15 percent of all full-time undergraduate students in business and accounting; 39 percent in liberal arts; less than 3 percent in nursing (collegiate), and 19 percent in teacher education. In Chart VIII, the figures given in table 11 are shown on a percentage basis for each Economic Area with the total of the four fields as 100 percent.

Variations in the percentages (chart VIII) from one area to another indicate the lack of local opportunity in some fields and also the concentration of opportunity in one or more fields. These facts do not indicate whether or not the extent of facilities is adequate to meet the need. They do, however, suggest that a part of the problem of providing adequate local opportunities is one of distribution among the four fields listed.

One measure of the extent of facilities in each Economic Area is the number of places per hundred high school graduates. This situation is shown in table 12, using the estimated number of high school graduates for 1970, and the facilities projected by existing colleges for 1970. Considering facilities within an Economic Area in terms of high school graduates within the area is a partial measure of the adequacy of facilities.

In order to meet the needs of youth of the State by 1970, the overall statewide shortage of facilities for 39,000 students, previously shown

[a] Estimated four-year facilities for the State for the years 1955, 1960, 1965 and 1970 are shown in tables 7 and 8. There is an indication of overall shortage soon after 1960. In this section which deals with facilities for four selected fields of study within each economic area, the situation as projected to 1970 is shown. It may be safely assumed that such shortages as are indicated are likely to occur by 1960 or before.

[1] See appendix E.

TABLE 11

Estimated full-time undergraduate four-year degree facilities, in four fields of study, 1970

ECONOMIC AREA	BUSINESS AND ACCOUNTING	LIBERAL ARTS	NURSING	TEACHER EDUCATION	ALL FIELDS
Binghamton	210	2,750	90	1,250	4,415
Capital District	1,295	3,265	595	3,050	14,710
Elmira	325	3,995	—	560	12,380
Mid-Hudson	—	2,775	—	1,675	4,450
Mohawk Valley	325	820	—	—	2,320
New York Metropolitan					
New York City	20,700	45,275	2,015	19,685	110,430
Nassau	2,560	5,615	340	1,150	10,570
Suffolk	—	—	—	305	305
Rockland	—	—	—	—	525
Westchester	1,270	4,425	—	360	6,920
Niagara Frontier	4,230	7,540	1,565	4,120	21,150
Northern Area	260	1,670	—	2,550	6,050
Rochester Area	992	4,807	928	3,288	12,188
Southwest Gateway	715	2,675	100	1,250	5,275
Syracuse	1,670	6,700	395	5,400	23,725
Total Number	34,552	92,312	6,028	44,643	235,413
Percentage distribution of facilities	14.7%	39.1%	2.6%	19.0%	100%
Facilities per hundred high school graduates, 1970 (242,000)	14.3	38.1	2.5	18.4	97.1

NOTE: The sum of the four fields listed does not equal the total of all fields; engineering and "other" fields are omitted.

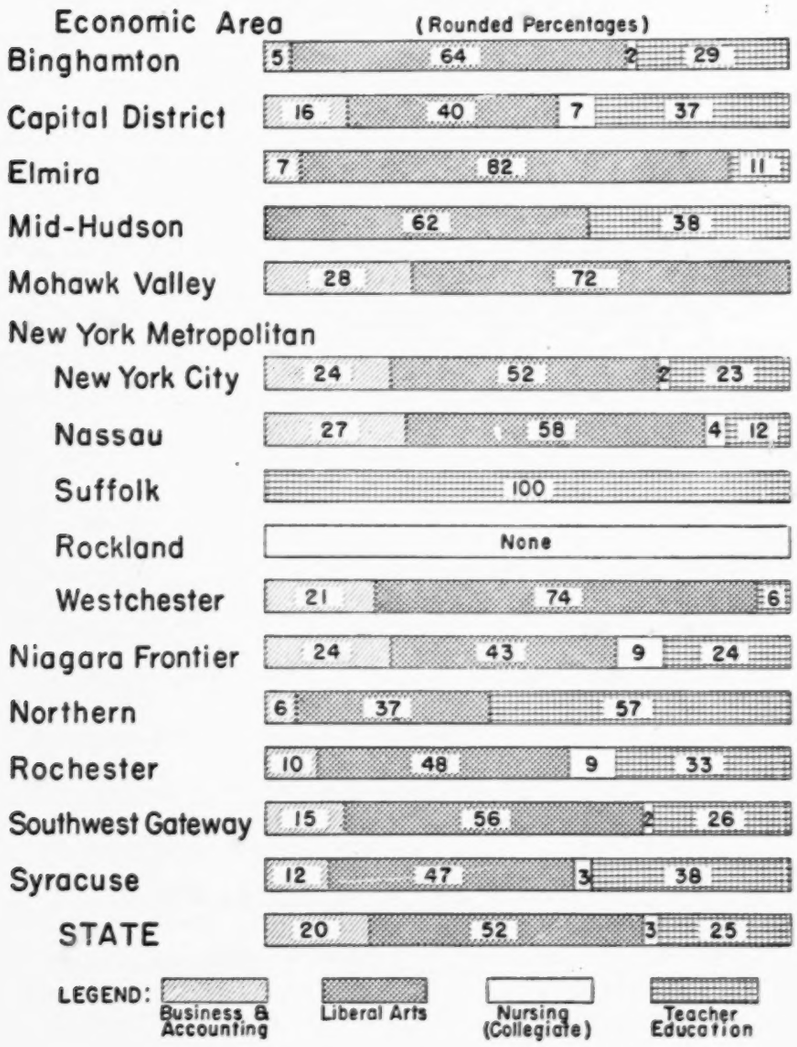
(table 8) is to be portioned in at least rough terms among the economic areas and by fields of study. The estimate of need to be used is the percentage of high school graduates of 1956 who chose each field, applied to the estimated number of high school graduates for 1970. A constant multiplier of 2.85 is used to convert freshmen into four years of enrollment. The percentages of high school graduates in each area who chose each field in a *four-year* college[1] are shown in table 13. The results of the computation are in table 14.

The estimates of shortage of facilities shown in table 14 bring out several interesting points. A caution, however, is necessary at this point. Because the estimates of need are based upon the expressed plans of high school graduates, there is no assurance that if the indicated facili-

[1] Programs in business and accounting and nursing (collegiate) are offered in two-year as well as four-year colleges.

Chart VIII

Percentage Distribution of Four-Year Degree Facilities in Four Fields of Study Estimated for 1970



ties were provided and filled that the personnel needs of the State would be met. This caution applies particularly to nursing (collegiate) and teacher education.

TABLE 12

Estimated places per hundred high school graduates in full-time undergraduate four-year degree programs four selected fields, 1970

ECONOMIC AREA	BUSINESS AND ACCOUNTING	LIBERAL ARTS	NURSING (COLL.)	TEACHER EDUCATION
Binghamton	3.4	45.0	1.5	20.5
Capital District	9.5	24.2	4.4	21.3
Elmira	5.5	67.8	—	9.5
Mid-Hudson	—	30.2	—	18.4
Mohawk Valley	4.5	11.2	—	—
New York Metropolitan				
New York City	23.6	51.5	2.3	22.4
Nassau	9.5	20.8	1.3	4.3
Suffolk	—	—	—	3.9
Rockland	—	—	—	—
Westchester	8.3	29.4	—	2.3
Niagara Frontier	18.8	33.6	7.0	18.3
Northern	4.3	27.5	—	42.0
Rochester	6.2	30.0	5.8	20.6
Southwest Gateway	14.2	53.0	2.0	24.8
Syracuse	13.3	53.4	3.1	43.0
STATE	14.3	38.1	2.5	18.4
Number	34,552	92,312	6,028	44,643

The assumption underlies these calculations, that by 1970 the migration of students in and out of New York State will be nearer in balance than it has been during the last 15 years.

In business and accounting there might be sufficient facilities within the State if they were distributed according to need. But if considered in relation to areas, shortages appear, the greatest in the Mid-Hudson Area and in Nassau and Suffolk Counties. All of the other areas except New York City, the Niagara Frontier and the Syracuse Area warrant some further expansion of the facilities in this field of study.

The shortage of facilities in liberal arts amounts to nearly 21,000 places on a statewide basis. Nassau and Suffolk Counties combined show the greatest shortage of all areas. Other areas in which there is a large shortage are New York City, Westchester County, Mohawk Valley and Capital District.

The areas having an apparent surplus of facilities in liberal arts are accounted for by a combination of sparse population and/or institutions

TABLE 13

Percentage of high school graduates who chose four-year degree programs—four selected fields

1956

ECONOMIC AREA	BUSINESS AND ACCOUNTING	LIBERAL ARTS	NURSING (COLL.)	TEACHER EDUCATION
Binghamton	3%	7%	1%	9%
Capital District	4	11	1	8
Elmira	3	8	1	8
Mid-Hudson	3	13	2	8
Mohawk Valley	3	9	1	8
New York Metropolitan				
New York City	5	21	1	7
Nassau	4	19	1	11
Suffolk	3	12	1	9
Rockland	3	15	2	10
Westchester	4	26	1	7
Niagara Frontier	3	12	1	10
Northern	4	7	2	9
Rochester	3	12	1	10
Southwest Gateway	3	10	2	9
Syracuse	3	14	1	9

that attract students from a statewide or national clientele. Such surpluses are not realistic.

Collegiate nursing has been included as one of the fields of study for analysis because of the reported shortage of personnel[1]. The number of students for whom facilities are available and planned is comparatively small. The result is a statewide shortage of facilities for 875 students. No facilities exist or are planned in seven areas. In most of the other areas, which have facilities, a modest expansion of facilities is justified by the evidence of demand.

Teacher education shows a statewide shortage of facilities for over 13,000 students by 1970. Nassau and Suffolk Counties combined show the greatest need for additional facilities. Other areas in which the shortage is significantly large are: Niagara Frontier, Westchester County, Mohawk Valley, and Rochester Areas.

The net expansion of places for about 39,000 undergraduate students in the State beyond that planned by existing colleges is most difficult to allocate to local Economic Areas. If an indicated shortage in one area is discounted because of the economic level and the outward pattern of

[1] *A Survey of Nursing Personnel Resources in Hospitals in New York State*, University of the State of New York, The State Education Department, Division of Research, 1956.

TABLE 14

Estimate of need for four-year degree programs in selected fields based upon plans of high school graduates (1956) projected to 1970

AREA AND FIELD OF STUDY	ESTIMATED NEED FOR 1970	ESTIMATED FACILITIES FOR 1970	DIFFERENCE
Binghamton			
Business and accounting	584	210	— 374
Liberal arts	1,217	2,750	+1,533
Nursing[1]	234	90	— 144
Teacher Education	1,568	1,250	— 318
Capital District			
Business and accounting	1,473	1,295	— 178
Liberal arts	4,284	3,265	—1,019
Nursing	527	595	+ 68
Teacher education	3,115	3,050	— 65
Elmira			
Business and accounting	564	325	— 239
Liberal arts	1,342	3,995	+2,653
Nursing	228	—	— 228
Teacher education	1,342	560	— 782
Mid-Hudson			
Business and accounting	767	—	— 767
Liberal arts	3,383	2,775	— 608
Nursing	422	—	— 422
Teacher education	2,083	1,675	— 408
Mohawk Valley			
Business and accounting	698	325	— 373
Liberal arts	1,870	820	—1,050
Nursing	279	—	— 279
Teacher education	1,662	—	—1,662
New York Metropolitan			
New York City			
Business and accounting	13,663	20,700	+7,037
Liberal arts	52,554	45,275	—7,279
Nursing	1,351	2,015	+ 664
Teacher education	17,519	19,685	+2,166
Nassau			
Business and accounting	3,215	2,560	— 655
Liberal arts	14,538	5,615	—8,923
Nursing	619	340	— 279
Teacher education	8,416	1,150	—7,266
Suffolk			
Business and accounting	656	—	— 656
Liberal arts	2,673	—	—2,673
Nursing	302	—	— 302
Teacher education	2,006	305	—1,701

[1] Collegiate nursing in each area.

TABLE 14 *continued*

AREA AND FIELD OF STUDY	ESTIMATED NEED FOR 1970	ESTIMATED FACILITIES FOR 1970	DIFFERENCE
Rockland			
Business and accounting	205	—	— 205
Liberal arts	1,052	—	—1,052
Nursing	114	—	— 114
Teacher education	701	—	— 701
Westchester			
Business and accounting	1,545	1,270	— 275
Liberal arts	9,562	4,425	—5,137
Nursing	300	—	— 300
Teacher education	2,574	360	—2,214
Niagara Frontier			
Business and accounting	2,146	4,230	+2,084
Liberal arts	7,664	7,540	— 124
Nursing	864	1,565	+ 701
Teacher education	6,387	4,120	—2,267
Northern			
Business and accounting	656	260	— 396
Liberal arts	1,214	1,670	+ 456
Nursing	328	—	— 328
Teacher education	1,559	2,550	+ 991
Rochester			
Business and accounting	1,530	992	— 538
Liberal arts	5,463	4,807	— 656
Nursing	616	928	+ 312
Teacher education	4,551	3,288	—1,263
Southwest Gateway			
Business and accounting	482	715	+ 233
Liberal arts	1,436	2,675	+1,239
Nursing	234	100	— 134
Teacher education	1,291	1,250	— 41
Syracuse			
Business and accounting	1,203	1,670	+ 467
Liberal arts	5,016	6,700	+1,684
Nursing	485	395	— 90
Teacher education	3,226	5,400	+2,174
State			
Business and accounting	29,387	34,552	+ 5,165
Liberal arts	113,268	92,312	—20,956
Nursing	6,903	6,028	— 875
Teacher education	58,000	44,643	—13,357
Other fields	66,442	57,878	— 8,564
All fields	274,000	235,413	—38,587

migration, a compensating upward adjustment should be made in another area if the total needed expansion is to be fulfilled.

The four fields discussed above account for approximately 75 percent of the demand as expressed by students, as well as 75 percent of the facilities as reported by existing colleges. A large block of the remaining fields of study is accounted for by engineering—to be discussed in the next section.

Engineering

It is well known that the demand for engineers is always peculiarly responsive to economic conditions and to national defense and military preparations. In the engineering field especially, facts and figures on enrollments and facilities are insufficient, by themselves, to determine what and how much to do for the future. To plan accurately for an adequate national supply of engineers, broad understanding of economic and international conditions as well as skilled interpretation of the most likely developments are vitally necessary. And here even the experts can go wrong, as past predictions prove. The only safeguard, as we plan today, is to look as carefully as we can at all sides of the picture, weigh the opinions of respected authorities and analyze the specific data for New York State in the light of these considerations.

As a starting point for the discussion of what should be planned for New York State, the arguments on the nationwide engineering problem are, therefore, briefly summarized here. The high points of the alarming shortage are given first and then the cautioning factors to be kept in mind.

The present engineering shortage can be called self-evident and needs little documentation. Recent Sunday issues of *The New York Times*, for example, have had 12 full pages in the financial section allocated to advertisements by large and small American industrial corporations for engineers of every description. Top leaders in government, industry and education have pointed to the seriousness of the situation, particularly during the past two years. Their principal arguments cover the following:

1. The generally estimated nationwide need for engineers now and for the immediate future has been placed at 30,000 to 40,000 new engineering graduates each year. More recently this has been raised to 45,000 to 50,000. (30,000 has been termed the civilian need, with the military need variable).

2. From 1950 to 1954, the total number of engineering graduates declined every year from a high of 50,000 in 1950 to 27,000 in 1954.

3. For civilian needs in the years ahead, larger and larger proportions of engineers will be required, as modern life becomes industrially

more complex. Both graduate engineers and technical assistants will have to increase at increasing rates.

4. Present indications on the Cold War give little hope for declining need for engineers on the defense front. Atomic developments reinforce the growing need.

5. Reports indicate that the U. S. S. R. is now graduating more engineers per year than we are and may continue to do so. We are still ahead slightly in total number available but the gap is closing. This threatens us both industrially and defense-wise.

6. It is reported that 25 percent of the U. S. S. R. engineers are women compared to less than 1 percent in the United States.

7. The need for more technicians in engineering is probably as great as for graduate engineers.

8. All over this country, there is a serious scarcity of science and mathematics teachers in both high schools and colleges. This is especially dangerous since it hits at the base of our engineering resources.

9. Lack of teachers is tied in with another problem—the lack of sufficient interest in undertaking engineering study. Many high school students capable of further education fail to go on for lack of either motivation or financial aid or both. In other words, the source of supply has not been properly tapped at present.

There is general agreement on the critical nature of the present shortage but some leaders point out the following cautions in making plans for the future:

1. Although there has been a recent decline in engineering graduates in the Nation, this trend is already reversed. The number of graduates increased slightly in 1955. More important, engineering enrollments have increased steadily for the past four years from 166,000 in 1951 to 243,000 in 1955, or 47 percent. This means an increasing number of graduates in the future.

2. The steadily increasing college-age population, due to high birth rates during and since the nineteen-forties, is expected to produce 40,000 engineering graduates annually by 1960 and between 50,000 and 60,000 by 1965. If a larger proportion of students than at present selects the field, the number will be higher.

3. This may not be enough (and assumes that facilities for training are available) but tends to make the outlook not as black as is sometimes painted.

4. Industry can do much to utilize graduate engineers much more effectively by the use of technical assistants, if the pressure of need is sufficient.

5. The emphasis on mere numbers may serve to weaken a needed

emphasis on quality. We should not set our sights solely by what U. S. S. R. is doing but by our own needs. It is imperative that the quality of our engineers be maintained and improved under the impact of sharply increased enrollments.

6. Efforts to increase engineering and scientific study are needed. of course. But the very essence of our democratic society is challenged if we put all our efforts into developing those talents alone. Finely trained minds are needed in every field if the nation is to be healthy and prosper.

7. The need for more and better high school and college teachers of science and mathematics seems to be supported on every hand without reservation.

These diverse points of view summarize the situation as it exists in engineering at the present time.

The problem of providing a sufficient corps of engineers is one of international, National and State proportions. Answers to the problem vary with the points of view of the persons questioned. On one hand, it is said that all of the engineers that can be graduated by the existing engineering colleges, plus any that might be added by the creation of any new colleges, will be too few. Engineers are sought by domestic employers through intensive recruitment methods; they are required by the Armed Forces for National defense; and they are sought by governmental foreign service agencies for assignment in foreign countries.

Engineering graduates are offered wages often exceeding those of their college instructors.

The point is made most emphatically by Professor Drucker[1] that the rapidly increasing technological and scientific aspects of society will require a correspondingly larger proportion of engineers and scientists. The point is also made that as automation procedures become more widespread there will be a greatly increased demand for highly skilled personnel not only in engineering but in design, installation, logistics and management. It is well known that engineering furnishes personnel for executive and management functions.

On the other hand, the officials of engineering colleges in New York State report that they cannot obtain a sufficient number of qualified high school graduates to fill their freshman classes. They also report significant plans for the expansion of engineering facilities for full-time undergraduate students.

Before making an attempt to estimate the need for facilities in engineering, a number of relevant points should be set forth for consideration along with the estimates of need for facilities.

[1] Peter F. Drucker, "America's Next Twenty Years," *Harper's Magazine*, March, April, May and June, 1955.

The impression was prevalent a few years ago that a substantial supply of technicians would lessen the demand for engineers. Experience has shown, however, that the employers who obtain large numbers of technicians desire to obtain still more engineers. Technicians are apparently not displacing engineers—both are in great demand.

Of the nearly 50,000 high school seniors who were queried about their plans for college in June 1956, 8.4 percent said they *definitely* planned to study engineering on a full-time basis. This percentage, applied to the 115,191 high school graduates of 1955, indicates that nearly 9,700 could have been expected to seek engineering in 1955.

The engineering colleges in New York State enrolled nearly 5,000[1] freshmen in the fall of 1955. The difference between the number of high school seniors who planned to study engineering and the number of freshmen enrolled in the colleges was, therefore, about 4,700.

The migration factor, however, must be considered. Of the almost 9,700 seniors who wanted engineering, approximately 7,200 planned to stay in New York State. Of the 5,000 freshmen admitted to engineering colleges in New York, approximately 4,100 were from New York State. The difference between these figures, 3,100 persons, represents a New York State counseling problem—a group of high school seniors who wanted to study engineering in New York State in excess of the number of freshmen admitted by the colleges from New York State.

This situation suggests the urgent need for early identification in high school of pupils whose interests, ability and aptitude point toward engineering, for counseling to the end that requirements for admission to an engineering college may be met, and for adequate preparation in high schools of prospective engineering students. The engineering college officials report that they could take more freshmen than they obtain but that many of the applicants do not have the required preparation in mathematics and science.

What happened to the 3,100 or more high school seniors who wanted to study engineering in New York State, in excess of the freshmen admitted from New York State, is a matter of speculation. However, there are a number of possibilities. Some of the seniors could have enrolled in a two-year college with the hope of transferring into engineering; others could have started in a liberal arts college; some could have enrolled in evening engineering programs on a part-time basis; some may have chosen a science program in a liberal arts college or in an engineering college, and some may have had to change their plans entirely.

[1] Allowance is made for 175 freshman students at Columbia University.

The migration of engineering students from New York to other States is somewhat difficult to appraise. Of the 9,700 high school seniors who indicated a choice of engineering, 2,500 said they planned to leave the State. It cannot be assumed, however, that all 2,500 of these seniors gained admission to an engineering college. Of this number, approximately 550 indicated that they would attend a public engineering college in another State. A recent check of the colleges of engineering of the Western Conference* (Big Ten) reveals that 883 New York residents were enrolled as undergraduate students in 1955. This enrollment would be equivalent to about 273 freshmen students.

The importance of these New York residents who are attending public engineering colleges in the Midwest is that such opportunities may soon be curtailed. The indication is clear that the public institutions in many States will limit their acceptance of nonresident students when the pressure for admission becomes severe.

The engineering facilities in New York State for full-time undergraduates totaled nearly 18,000 in 1955. Of these facilities, 52.2 percent were in New York City with 45.4 percent of the high school graduates; 47.8 percent of the facilities were upstate with 54.6 percent of the high school graduates. The implication of these facts is that if, and when, existing engineering facilities need to be supplemented with new ones, rather than by the expansion of existing facilities, the location chosen should obviously be outside of New York City.

The emphasis in this study has been upon facilities for full-time undergraduate students although it is well known that facilities for graduate students and for part-time students are extensive.

Rounded total enrollments for 1955, are as follows:

Full-time undergraduate	16,000[a]
Part-time undergraduate	4,700
Full-time graduate	475
Part-time graduate	4,400
Total	25,575

The extent to which engineering facilities in New York State were filled in 1955, is shown in table 15. In this table, fall enrollment is compared with the college officials' estimates of facilities. The facts shown by this table are that there were places for only 2,236 more full-time undergraduate engineering students if they could have been located in the colleges having more accommodations than students, and

* Iowa State (public) substituted for Northwestern (private).
No engineering at Indiana University.

[a] Includes an allowance for freshmen and sophomores at Columbia University.

that on an overall basis, enrollment amounted to 88 percent of the estimated facilities.

Estimates of planned facilities for full-time undergraduate engineering students have been made at various times by college officials. These estimates have been the subject of considerable debate and revision during the entire year of 1956. In December 1956, the Association of Engineering Colleges made a thorough review of the previous estimates and submitted the figures shown in table 16.

These estimates are subject to further revision as time brings about changed conditions. It is pointed out, for example, that if enrollments in the freshman and sophomore years are reduced by an increasing number of students attending liberal arts colleges for these two years, the enrollment of junior and senior year students would be correspondingly increased in a number of the engineering colleges.

TABLE 15

Total full-time undergraduate enrollment and facilities, engineering

1955

INSTITUTION	ENROLLMENT FALL '55	FACILITIES FALL '55	PERCENT ENROLLMENT IS OF FACILITIES
Clarkson College of Technology	925	990	93%
City College[1]	2,921	2,921	100
Columbia University[2]	345	600	58
Cooper Union	342	352	97
Cornell University	1,803	2,100	86
Manhattan College	1,055	1,055	100
New York University	1,285	1,700	76
Polytechnic Institute of Brooklyn	1,698	1,700	100
Pratt Institute	348	700	50
Rensselaer Polytechnic Institute	2,384	2,690	89
State University of New York			
College of Ceramics at Alfred University	258	300	86
Maritime College	266	300	89
Syracuse University	687	800	86
Union College	314	390	81
University of Buffalo	662	920	72
University of Rochester	293	295	100
Webb Institute of Naval Architecture	61	70	87
State	15,647	17,883	88

[1] Available only to residents of New York City.
[2] Juniors and seniors only—no allowance is made in this table for an estimate of facilities for 600 freshmen and sophomores.

TABLE 16

Estimates of facilities for full-time undergraduate students in engineering, New York State as of March 1, 1957

INSTITUTION	1960	1965	1970
Clarkson College of Technology	1,405	1,620	1,800
City College[1]	4,000	4,400	4,400
Columbia University[2]	750	900	1,000
Cooper Union	532	620	620
Cornell University	2,370	2,400	2,400
Manhattan College	1,400	1,500	1,800
New York University	2,050	2,550	2,550
Polytechnic Institute of Brooklyn	3,075	3,425	3,760
Pratt Institute	800	1,100	1,100
Rensselaer Polytechnic Institute	2,990	3,860	4,200
State University of New York			
College of Ceramics at Alfred University	325	325	325
Maritime College	306	300	300
Syracuse University	800	900	1,100
Union College	430	460	460
University of Buffalo	1,400	1,750	1,950
University of Rochester	355	500	580
Webb Institute of Naval Architecture	70	70	70
State	23,052	26,680	28,415

[1] Available only to residents of New York City.
[2] Columbia University enrolls only Juniors and Seniors in Engineering. An allowance is included in these figures for the usual percentage of students in the first two years.

Another key question to be answered in this report is, what is the evidence, if any, of the need for additional facilities in engineering in New York State? This question implies a judgment of the ability of existing and planned facilities to accommodate full-time undergraduate students. The measure of adequacy that will be applied, is as follows:

> **The percentage of high school graduates admitted by engineering colleges in 1955, projected according to the estimated increase in number of high school graduates to 1970.**

This criterion is extremely conservative in that it does not allow for a possible increase in the percentage of high school gradautes, who want engineering, who may be prepared to meet requirements for admission to engineering colleges. It also does not provide for an increase in demand that may come about due to a possible curtailment of non-resident students in public colleges in other states.

If high schools can increase the percentage of graduates who can meet the requirements for admission to engineering colleges, the de-

mand will exceed the estimates computed under the criteria used and will approach the percentage of high school seniors who want to enter engineering.

In table 17, estimates of need for accommodations are shown on the basis of 4.294 percent of high school graduates. With this assumption applied, the facilities as planned appear to be adequate for 1960. But after 1960, the planned facilities fall short of the indicated need—both for freshmen and for total undergraduate students.

TABLE 17

Projected estimate of need and facilities in engineering based upon the number of freshmen enrolled in 1955
(Rounded figures)

	1960	1965	1970
Estimated number of high school graduates...	162,000	227,000	242,000
Estimate of need for full-time freshman accommodations	6,950	9,750	10,400
Estimated accommodations for full-time freshmen	6,950	8,000	8,650
Shortage of accommodations for full-time freshmen	0	1,750	1,750
Estimate of need for all full-time undergraduates	22,500	31,500	33,600
Estimated accommodations for all full-time undergraduates	23,000	26,600	28,400
Shortage of accommodations for full-time undergraduates	0	4,900	5,200

If the engineering colleges succeed in their plans for expansion, as indicated up to December 20, the number of freshmen who could be accommodated, as estimated by college officials is shown in table 18, with the percentage that these freshmen would be of the estimated number of high school graduates. It is pertinent to observe that, whereas, the percentage of high school graduates for whom there were accommodations in 1955, is 4.8 percent; it declines steadily with the increasing population, but in spite of the planned expansion of facilities, to 3.6 percent in 1970.

The measure of need is conservative. Facilities as planned appear to meet this need until 1960. However, the facilities could fall short of the need prior to 1960 if either a larger percentage of high school graduates meets the requirements for admission, or the opportunities for New York

residents to obtain admission to public colleges of engineering in other states is curtailed. Both factors might operate to accelerate the demand.

If industry and the Armed Forces demand a larger proportion of college graduates than they now do, resulting in an increasing proportion of high school graduates seeking engineering, and qualifying for admission, the projected shortage of facilities would be greater than that indicated.

TABLE 18

Percentage relationship between engineering facilities for freshmen and high school graduates
1955-70

(Rounded figures)

	1955	1960	1965	1970
Estimated number of high school graduates	115,191	162,000	227,000	242,000
Estimated facilities for freshmen	5,530	6,950	8,000	8,650
Percentage	4.8%	4.3%	3.5%	3.6%

NOTE: The above figure 5,530 freshmen for 1955, is the estimated number for whom facilities were available.

PART IV

SUMMARY

In brief summary of the needs and facilities in higher education, there is danger of oversimplification, as well as of omission. It is important, therefore, to recognize that this summary gives only highlights of the evidence necessary to determine policy.

High school graduates. Between 1955 and 1970 the number of high school graduates in New York State is expected to increase from 115,191 to 242,000 or by 110 percent. The percentages of increase vary considerably among different Economic Areas. In Nassau and Suffolk Counties the increases are very large; 269 percent and 167 percent respectively.

Two-year technical programs. Facilities in the State, as planned, are expected to increase from 12,400 in 1955, to 29,200 in 1970. A conservative estimate of need (estimated at 16 percent of high school graduates) for facilities shows a shortage in 1955 of places for 17,800 students. This shortage is expected to increase to 34,200 by 1970. The estimated shortage varies among different Economic Areas, depending upon the extent of planning for expansion of existing facilities and the increase in number of high school graduates.

In Nassau and Suffolk Counties and in New York City the existing and projected shortages of facilities indicate urgent action.

Four-year degree programs. The estimates of facilities and needs show that in 1955, colleges could have accommodated 25,000 more full-time undergraduate students than were enrolled in programs which high school graduates may enter without previous college credits. By or shortly after 1960, the planned expansion of facilities will be equaled or exceeded by the estimated need. By 1970, there will be an estimated shortage of facilities for 39,000 students. The expansion planned by four-year colleges averages 41 percent—from 1955 to 1970. An average expansion of 65 percent is indicated to meet the statewide need by 1970.

The number of students attending four-year colleges from Nassau and Suffolk Counties is expected to increase to 44,500 in 1970. Of the 44,500 students who might be expected to attend four-year colleges from Nassau and Suffolk Counties in 1970, nearly 32,500 would seek business and accounting, liberal arts, nursing (collegiate) and teacher education if the choices of high school graduates continue in the same pattern as the graduates of 1956. The institutions located in these counties are expected to have facilities in 1970 for 10,900 students, some of whom will come

from outside the area. Increasing numbers of students will have to leave the community to attend college, and in the face of the growing general shortage of college facilities will have increasing difficulty in finding places to go. It is estimated that new facilities to accommodate between 18,000 and 22,500 students will be needed by 1970 to accommodate those students who might be expected to attend locally.

There are indications of a substantial shortage[1] of facilities for full-time undergraduate students by 1970 in four fields of study in the Economic Areas listed below.

BUSINESS AND ACCOUNTING	LIBERAL ARTS	COLLEGIATE NURSING	TEACHER EDUCATION
Mid-Hudson	Nassau and Suffolk	All areas need either new or slightly expanded facilities *except:*	Nassau and Suffolk
Nassau and Suffolk	New York City		Niagara Frontier
Rochester	Westchester		Westchester
	Mohawk Valley		Mohawk Valley
	Capital District	Capital District	Rochester
		New York City	
		Niagara Frontier	
		Rochester	

Engineering. The most conservative estimate of need that can be justified shows that, whereas the colleges in New York could have enrolled 2,236 more full-time undergraduate students than they obtained in 1955, their planned expansion will just about equal the estimated need (4.9 percent of high school graduates) by 1960. After 1960, the planned expansion falls short of need. By 1970, the estimated shortage is for facilities to accommodate 5,200 students.

The estimate of need is conservative, and may prove to be inadequate if high schools prepare a larger percentage of pupils for admission to engineering colleges, or if public engineering colleges in other states rule out nonresidents.

The estimate of need may also be inadequate from the point of view of meeting an increased demand for engineers.

[1] In business and accounting, 500 or more
In liberal arts, 1000 or more
In teacher education, 1200 or more

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APPENDIX A

Estimated Number of High School Graduates—
1956, 1960, 1965 and 1970

The following estimates of high school graduates were prepared for the current studies in higher education. The estimate for 1956 was based on the 1955 actual with only slight modifications. The 1960, 1965 and 1970 estimates are based on births 18 years earlier, the migration rates for school children as reported in "Migration of Children in New York State" by Theodore Bienenstok of the Division of Research and a projected trend of proportion of the age group graduating from high school.

Estimated high school graduates by counties
1956, 1960, 1965 and 1970

COUNTIES AND AREAS	YEAR			
	1956	1960	1965	1970
New York State	118,680	162,000	227,000	242,000
Metropolitan Area	73,040	98,072	132,331	137,844
New York City	55,000	71,051	94,298	87,809
Nassau	7,800	13,003	17,682	26,849
Suffolk	3,140	4,091	5,847	7,819
Rockland	700	1,533	2,268	2,463
Westchester	6,400	8,394	12,236	12,904
State Less New York City	63,680	90,949	132,702	154,191
Binghamton Area	3,100	3,630	6,041	6,106
Broome	1,800	1,981	3,410	3,473
Chenango	400	481	793	820
Otsego	400	600	1,008	967
Delaware	500	568	830	846
Capital District	5,750	8,132	12,123	13,667
Albany	1,800	2,310	3,678	4,115
Rensselaer	1,200	1,591	2,466	2,632
Schoharie	220	295	439	408
Saratoga	600	944	1,361	1,545
Schenectady	1,120	2,070	2,647	3,411
Warren	380	410	711	754
Washington	430	521	812	802
Elmira Area	2,450	3,502	5,676	5,890
Schuyler	110	158	260	289
Tompkins	470	607	1,133	1,233
Tioga	300	392	664	574
Chemung	680	1,173	1,882	1,950
Steuben	890	1,172	1,737	1,844
Mid-Hudson	4,550	5,655	8,695	9,133
Greene	260	339	515	528
Ulster	830	917	1,405	1,613
Sullivan	380	422	691	680
Orange	1,390	1,632	2,685	2,733
Putnam	190	239	366	408
Dutchess	1,100	1,623	2,323	2,431
Columbia	380	483	710	740

COUNTIES AND AREAS	YEAR			
	1956	1960	1965	1970
Mohawk Valley	3,360	4,599	6,992	7,285
Oneida	1,850	2,654	3,952	4,276
Herkimer	540	733	1,098	1,095
Hamilton	40	39	68	67
Fulton	440	517	872	874
Montgomery	490	656	1,002	973
Niagara Frontier	9,450	14,358	19,196	22,410
Niagara	1,950	2,938	3,916	4,397
Erie	7,500	11,420	15,280	18,013
Northern Area	2,990	3,945	5,909	6,079
Jefferson	700	1,069	1,458	1,501
Lewis	260	267	430	465
St. Lawrence	830	1,193	1,781	1,909
Franklin	380	467	767	757
Clinton	500	521	841	799
Essex	320	428	632	648
Rochester Area	6,670	9,600	14,309	15,974
Monroe	3,600	5,509	8,276	9,075
Ontario	550	679	1,151	1,348
Seneca	250	349	529	716
Wayne	550	760	1,080	1,313
Yates	200	214	340	395
Genesee	530	760	1,010	1,089
Livingston	390	544	734	805
Wyoming	300	342	540	599
Orleans	300	443	649	639
Southwest Gateway	2,470	3,192	4,958	5,038
Chautauqua	1,220	1,678	2,590	2,693
Cattaraugus	790	990	1,558	1,539
Allegany	460	524	810	806
Syracuse Area	4,870	7,315	10,770	12,574
Oswego	660	858	1,370	1,499
Onondaga	2,870	4,615	6,533	8,000
Cayuga	520	849	1,303	1,403
Cortland	370	410	653	675
Madison	450	583	911	997

APPENDIX B

Economic Factors in Each Area

Binghamton Area Economic Factors

The rate of college attendance in the Binghamton Area will tend to run slightly below the average of the Upstate Area because the incomes tend to be low. The per capita income in the area in 1954 was $1,597 compared to the Upstate average of $1,773. Family incomes in this area probably average about $3,600. Incomes in Broome County are several hundred dollars above this level and those in the other counties several hundred dollars below it. Thus, there should be special attention to the needs of the low income group even though the big population in Broome County has average incomes.

The percentage growth in population in this area between 1940 and 1950 was 10 percent, the same as the change for the State as a whole but lower than the 15 percent for the State outside New York City. There is little present indication of any drastic change in the growth trends in the future.

The proportion of the population under 18 in the area (30 percent) is higher than the 28 percent for the State outside New York City. Thus, the relatively high proportion of children aggravates the problems resulting from low incomes.

The educational level is somewhat lower than the average for the State and for the State outside New York City. Otsego County (37 percent) is almost up to the State outside New York City.

The area has a high proportion of its labor force engaged in manufacturing. The Binghamton Area proportion is 35 percent compared to 32 percent for the State outside New York City.

Capital District Economic Factors

The rate of college attendance in the Capital District will be approximately the same as the Upstate average because per capita incomes ($1,854 in 1954) are close to the average of the Upstate Region and only moderately below the statewide average of $2,163. Family incomes probably average close to $4,000 and in Albany and Schenectady Counties they are substantially higher. Some counties, such as Rensselaer, Schoharie, Saratoga and Washington, have low incomes and the needs of these areas for low-cost education should be recognized even though the averages for the area are fairly high.

The percentage growth in population in this area between 1940 and 1950 was 10 percent which is the same as the statewide average, and somewhat lower than the 15 percent in the State outside New York City.

There is little present indication of any important change in the trend of population.

The proportion of the population under 18 in the area is 27 percent, which is very close to the statewide average of 26 percent and the Upstate average of 28 percent. Thus, the number of children per adult does not create a financing difficulty.

The educational level of the adults in the area is near the State average —37 percent high school graduates. Albany County (38 percent) and Schenectady (44 percent) are high and Washington (30 percent) is low.

The area has 32 percent of its employed labor force engaged in manufacturing which is close to the average for the State. The State government in Albany and the General Electric Company headquarters and research center in Schenectady result in a large managerial and professional group. There is need for educational opportunities on a local basis for persons engaged in these occupations.

Elmira Area Economic Factors

The rate of college attendance in the Elmira Area will be retarded by the relatively low income level of the area. The per capita income was $1,490 in 1954, considerably below the statewide average of $2,163 and also below the upstate figure of $1,773. Family incomes in the area probably average about $3,600. These low per capita incomes are not as serious as they seem because they can be largely accounted for by the large number of students attending Cornell who are included in the population but most of whose families live elsewhere. There is no question that incomes are very low in Schuyler and Tioga Counties and quite low in Steuben. Therefore, special attention to minimizing costs and maximizing opportunities for self-help would be desirable.

The percentage growth in population in this area between 1940 and 1950 was 17 percent, which is above the 10 percent rate for the State and the 15 percent rate for the State outside New York City. This increase is in part due to the counting of students at Cornell in 1950 and not counting them in 1940. Even after allowing for this change the increase would be close to 10 percent. There is no reason to anticipate a drastic change from this growth rate.

The proportion of the population under 18 is somewhat higher than the State outside New York City; 30 percent compared to 28 percent. The students at Cornell pulled this figure down so that the true figure for normal residents would be above 30 percent. This points to the area as one with some excess of children in relation to adults and a compounding of the financial difficulty of low incomes with an unusual number of children to educate.

The educational level is high because of the students and faculty at Cornell. Except for Tompkins County. the area is about average in proportion of high school graduates among the adults.

The area is average in the proportion of the labor force engaged in manufacturing. There are some important manufacturing centers in the area but Cornell University is also very important and the size of this nonmanufacturing institution pulls the proportion engaged in manufacturing down.

Mid-Hudson Area Economic Factors

The rate of college attendance in the Mid-Hudson Area will probably be slightly below the statewide average so far as it is affected by economic factors. The per capita income in the area was $1,631 in 1954; considerably below the statewide average of $2.163 and the Upstate average of $1,773. Average family income is probably near $4.000 a year. Dutchess and Putnam Counties are relatively high and some of the other counties are quite low. This sharp variation in income from county to county is an important consideration in this area.

The percentage growth in population in the area between 1940 and 1950 was 9 percent, very close to the 10 percent growth for the State as a whole. The area is economically healthy and there is every indication that a reasonable growth rate will continue in the future. In fact, the natural advantages of the area may make it one of the most dynamic areas of the State. The present trend toward decentralization of industry will place a premium on the availability of ocean shipping. good trunk line railroads and high-speed highways all within easy travel distance of an administrative and sales center like New York City.

The proportion of the population under 18 in the area is the same as for the State as a whole. Thus, there is no indication of an excess of children in comparison to persons of working age.

The educational level is low. Only one county in the area, Putnam, has more adults with a high school education than the State average of 36 percent. Ulster County has the very low figure of 27 percent.

The area has a low percentage (25 percent) of its labor force engaged in manufacturing. This compares with a State average of 30 percent. The low percentage engaged in manufacturing may be the result of inadequate opportunities for this type of work with large numbers of persons living on low incomes in agriculture and resort occupations. Low wage industries appear to hold a reservoir of labor that could be diverted to higher pay manufacturing. Improved educational facilities might help in recruiting new companies to the area.

Mohawk Valley Area Economic Factors

The rate of college attendance in the Mohawk Valley will probably be slightly below the upstate average. Per capita incomes in the area were $1,646 in 1954, considerably below the statewide average of $2,163, but above several of the low income areas in the Upstate region. Family incomes in the area probably average $3,500 or $3,600. The costs of higher education will be difficult for the majority of the families to meet and special attention to minimizing costs and maximizing the opportunities for self-help would be desirable.

The percentage growth in population in this area between 1940 and 1950 was 6 percent, which is much lower than the average of 15 percent for the State outside New York City and substantially below the State average of 10 percent. This area has been seriously affected in recent years by the out migration of the textile and related industries. This movement has spent much of its force and replacement industries are developing in the area. Conditions may be somewhat more favorable for growth in the future than in the past.

The proportion of the population under 18 in the area is 28 percent, exactly the same as for the State outside New York City. Thus, the below average incomes of the area are not compounded with an excess proportion of children.

The educational level in the area is below that of the State or the Upstate region. The proportion of high school graduates among adults in Hamilton County is about the same as the State average, 36 percent, but the other four counties in the area are 30 percent and below. The area apparently needs more stimulus for education.

The area has a very high proportion of its employed labor force engaged in manufacturing—43 percent compared to a State average of 30 percent. There is great variation from county to county with Hamilton having the low of 18 percent and Fulton the high of 53 percent. Technical education is needed in the area because of the high industrial concentrations in Utica, Rome, Herkimer and Amsterdam.

Economic Factors in the New York Metropolitan Economic Area

New York City

The rate of college attendance in the New York City area will tend to be high because of the high income of the people of the area, but the rapid migration of the high economic status persons from New York City to the suburbs and their replacement by low income Negroes and Puerto Ricans may change this condition in the future. Per capita income in New York City in 1954 was $2,386, well above the statewide average of $2,163. Family incomes were probably only a little above $4,000. Thus, the family incomes are not much above the statewide average.

The percentage growth in population is only 6 percent; considerably below the 10 percent statewide average. There is little present indication of an important change in population trends. The rates of out migration and in migration are quite high and the net change is therefore dependent on the balance of these large movements which makes prediction dangerous.

The proportion of the population under 18 is low, 24 percent compared to the State average of 26 percent. The low proportion of children makes the problem of educational support relatively light for the adult population.

The educational level in the area is relatively low. The proportion of the adults having a high school education was less than 35 percent in 1950. This figure is kept low by the migration into and from the city. These forces may hold college attendance rates below those attained in other parts of the State.

The area has a low proportion of the labor force engaged in manufacturing, although it is a great manufacturing center. The point is that it is also a great trading and cultural center.

Nassau-Suffolk Counties

Nassau and Suffolk Counties are a suburban portion of the New York Metropolitan Area. College attendance tends to be high from these areas because the residents have relatively high incomes and a tradition of higher education for their children. Per capita income in Nassau County was $2,333 and in Suffolk County $1,600. Nassau, the county with most of the population, is well above the statewide average of $2,163. Average family incomes in Nassau County are above $5,000 and in Suffolk probably somewhat below $4,000.

The percentage growth in population in Nassau County between 1940-1950 was 65 percent, and in Suffolk 40 percent. Both of these were phenomenal rates and it seems unlikely that the rate of growth can be maintained as the base population increases. Therefore, the estimates in this study only include a continuation of the amount of growth rather than the rate of growth.

The proportion of the population under 18 is only slightly above the Upstate average of 28 percent. Thus, there is no serious overload of children in the area.

The educational level of adults in the area is very high. Nassau County had 51 percent, and Suffolk 38 percent, with a high school education. This compares with 36 percent for the statewide average.

The proportion of the labor force engaged in manufacturing is very low in both counties, Nassau had 23 percent, and Suffolk 18 percent,

compared to the statewide average of 30 percent. There are some important manufacturing plants in the area but the population is dominated by the professional and business occupations of the commuters.

Westchester-Rockland Counties

Westchester and Rockland Counties are a suburban portion of the New York Metropolitan Area. College attendance tends to be high from these areas because the residents have relatively high incomes and a tradition of higher education for their children. Per capita income in Westchester County was $2.876 and in Rockland County $1.730 in 1954. Westchester County is well above the statewide average of $2,163. Family incomes averaged almost $4,000 in Rockland and over $5,000 in Westchester. While the commuting population has a high income there is a large merchandising and service class with quite low incomes. A considerable number of students needing minimum cost education will be found in this area.

The percentage growth in population in the area between 1940 and 1950 was about the same as the statewide total. The Rockland County figure was 20 percent, double the rate of growth in Westchester. Both areas are likely to continue their growth with Rockland County possibly entering an explosive period with developments related to the new Thruway bridge.

The proportion of the population under 18 is almost the same as the upstate average of 28 percent. Thus, there is not an overload of children even though people with children tend to move to the suburbs.

The educational level of adults in the area is very high. Rockland County had 42 percent, and Westchester 50 percent, with a high school education. This compares with 36 percent for the statewide average.

The proportion of the labor force engaged in manufacturing is the same as the statewide average in Rockland County (30 percent), but much lower in Westchester (24 percent). Commuting areas tend to have many residents from the professional and business management occupations and this makes manufacturing employment low.

Niagara Frontier Area Economic Factors

College attendance in the Niagara Frontier will probably run at or above the statewide average because it is a high income area. Per capita incomes in the area averaged $2,054 in 1954; approximately equal to the State average of $2,163. Family incomes in this area probably average about $4,100; twice the per capita incomes. While this is close to the State average, it is still low enough to mean that the average family will find it difficult to give much help to its children when attending college.

The percentage growth in population in this area between 1940 and 1950 was 14 percent, which is almost the same as the average of 15 percent for upstate. This is a rapid rate of growth for an economic area that includes both the city centers and the suburbs. The rapid growth in upstate New York is dominated by the movement out of New York City to the suburbs, so that the upstate comparison underemphasizes the significance of the Niagara Frontier Area growth. The rapid growth in the area is well established and seems to come from the long-term characteristics of the area rather than from special events.

The major known events of the future are the opening of the St. Lawrence Waterway and the more complete development of Niagara power. Both of these events favor continued growth. Long-term planning must apparently include a continuation of past growth rates, as was done in the high school graduate estimates in this report. These estimates of migration may be too low in view of the two favorable developments expected in the future.

The proportion of the population under 18 in the area is somewhat higher than in New York City and about the same as the 28 percent of the upstate area. Thus, the age distribution presents no special problems.

The educational level is considerably below the State average. This reflects the relatively large number of jobs in the area calling for brawn rather than high mental ability or training. This will tend to offset, in part, the effect of high per capita incomes in the area in increasing college enrollments.

The area has a high proportion of its employed labor force (40 percent) engaged in manufacturing. The only economic area in the State with a higher proportion is the Mohawk Valley Area (43 percent).

Northern Area Economic Factors

The rate of college attendance in the Northern Area will probably run below that of most other areas in the State because incomes are seriously below those in the other areas. Per capita incomes averaged $1,226 in 1954; less than 60 percent of the statewide average of $2,163. The only other areas approaching this low figure are the Southwest Gateway with $1,455 and the Elmira Area with $1,490. Family incomes in the area probably average about $3,000, 2.5 times per capita incomes. With average family incomes far below $4,000, the family problem of meeting the costs of education will be unusually difficult. Special attention to minimizing costs and maximizing the opportunities for self-help is important.

The relative income level of the area may improve over the next few years with the opening of the St. Lawrence Waterway and the Plattsburgh

air base. Work opportunities and earnings in and near Massena and Plattsburgh are almost certain to improve considerably in the near future. The effect will be less certain and slower to materialize in the other parts of the area.

The percentage growth in population in this area between 1940 and 1950 was 3 percent, which is much lower than the 15 percent for the State outside New York City or the 10 percent for the State as a whole. The St. Lawrence and Plattsburgh developments have already drawn population to the area and the rate of growth, 1950-1960, should be higher.

The proportion of the population under 18 in the area is higher than in any other area of the State. The Northern area figure is 33 percent as compared to 26 percent for the statewide average and 28 percent for the State outside New York City. The high proportion of children tends to lower the per capita income of the area and compounds the financial difficulty, resulting from the low family incomes, by having more than the average number of children per adult earner.

The educational level of the adults in the area is low in comparison with the State as a whole. Every county in the area has a smaller proportion of high school graduates than the State as a whole. The low county, Clinton, has 27 percent and the high county, Jefferson, has 34 percent compared to the State average of 36 percent.

The area has the lowest proportion of its labor force engaged in manufacturing of any area in the State; 22 percent compared to a statewide figure of 30 percent.

The low income, slow rate of population growth, low educational level and low proportion engaged in manufacturing, all point to a sluggish area that is not keeping pace with developments elsewhere. It is an area that needs the stimulation of better education and if this is added to the stimulation of the new economic developments the area may be very different in the next 10 years.

Rochester Area Economic Factors

The rate of college attendance in the Rochester Area will probably be near the State rate as per capita incomes ($1,978 in 1954) are near the State per capita income of $2,163. The averages for Monroe County differ sharply from those in the rest of the area. Per capita income in Monroe County was $2,300 as compared with the highest county other than Monroe of $1,656 (Genesee) and the lowest $1,114 (Wyoming). Average family incomes in the area will probably exceed $4,000. Plans for educational service in this area must therefore give special consideration to the problems of low income families even though the area is dominated by prosperous Rochester.

The proportion of the population under 18 in the area is the same as the upstate figure; 28 percent. Thus, the problems of family size are presumably similar to those observed in the total upstate region.

The educational level of the adults in this area is about the same as for the State as a whole (36 percent high school graduates); Monroe and Ontario Counties are the highest with 38 percent and 39 percent, and Orleans is lowest with 29 percent.

The area has a high proportion of its employed labor force engaged in manufacturing (38 percent compared to 32 percent for the upstate average). Manufacturing is concentrated in Monroe County (45 percent) and some counties in the area have little manufacturing; for instance, Yates County has only 19 percent.

Southwest Gateway Area Economic Factors

The rate of college attendance in the Southwest Gateway Economic Area will probably run a little below the statewide average because per capita incomes in the area averaged $1,455 in 1954; considerably below the statewide average of $2,163. Family incomes in this area probably average about $3,600; 2.5 times per capita incomes. With an average family income below $4,000, the family problem of meeting the costs of higher education will be unusually difficult. Special attention to minimizing costs and maximizing the opportunities for self-help would be desirable.

The percentage growth in population in this area between 1940 and 1950 was 9 percent, which is much lower than the average of 15 percent for the State outside New York City. There is little present indication of any important change in this slow growth trend which implies that long-term planning can proceed on the assumption of very little net migration.

The proportion of the population under 18 in the area is somewhat higher than in the rest of the upstate area. The local figure is 30 percent as compared to 28 percent for the upstate area. The high proportion of children tends to lower the per capita income of the area and compounds the financial difficulty, resulting from the low family incomes, by having more than the average number of children per adult earner.

The educational level in the area is about the same as for the State as a whole. The proportion of high school graduates in Allegany County is higher than the State average; but lower in Chautauqua than the State average.

The area has a high proportion of its labor force engaged in manufacturing. The Southwestern Gateway proportion is 35 percent, com-

pared with 32 percent upstate. The high proportion of the labor force engaged in manufacturing indicates the importance of technical training to the people of the area.

Syracuse Area Economic Factors

The rate of college attendance in the Syracuse Area will probably be near the upstate average. Per capita incomes in 1954 were $1,756; close to the upstate average of $1,773 but well below the statewide average of $2,163. Family incomes probably average about $4,000 a year.

The percentage growth in population in this area between 1940 and 1950 was 13 percent. This is almost as great as the 15 percent growth in the State outside New York City and appreciably larger than the 10 percent growth in the State as a whole. The fact that students in Syracuse University were counted as local residents in 1950, but not in 1940, should be remembered in this comparison. Syracuse is in a dynamic growth phase following a serious period of relative stagnation in the latter part of the depression. Growth companies, such as Carrier Corporation, came in at that time and the availability of labor drew new plants such as the General Electric Electronics Park. The future seems to promise continued growth.

The proportion of the population under 18 in the area (29 percent) is somewhat higher than the State as a whole (26 percent) and slightly higher than the State outside New York City (28 percent). There is no serious problem in this area from an excess proportion of children.

The educational level of adults in the area is somewhat above the State average. Onondaga County has a high proportion of high school graduates (41 percent). Cortland and Madison Counties are also quite high and Oswego and Cayuga low.

The area has a high proportion of its labor force engaged in manufacturing (36 percent) but it is also an important trading and business center. The industrial and commercial importance of the area justifies the maintenance of a broad program of higher education to serve these industries.

APPENDIX C

High School Senior Information Form

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY 1

COLLEGE PLANS OF HIGH SCHOOL SENIORS, JUNE 1956 Serial **No. 034580**

7. Your name _____ Sex: M.....(1); F.....(2)

8-9. Name of your high school _____ County _____

10. Check kind of high school: Parochial.....(1) Private.....(2) Public.....(3)

11. Check father's *highest level* of education:
- Grade school ....(1)
- Some high school..... .....(2)
- High school graduation..... .....(3)
- Did not finish high school but attended some other type of school..... .....(4)
- High school graduation plus some college-type education beyond high school ....(5)
- College graduation ....(6)
- Graduate or professional school after college..... .....(7)

12. Check the one category below which *best describes* your father's occupation. If he is not living, indicate his occupation before his death.
- Professional man or executive..... _____(1)
- Proprietor or manager of business enterprise or farm ..... _____(2)
- Officeworker, salesman, minor public official..... _____(3)
- Machine operator, mechanic, craftsman..... _____(4)
- Other occupation, not requiring specialized training ..... _____(5)

13. Do you plan to attend college next fall?
Yes (definitely)_____(1) Yes (probably)_____(2) No._____(3)

14. If you checked YES (definitely or probably) to question 13, check one of the following boxes to indicate your plan.

I PLAN TO ATTEND	REGULAR FULL-TIME DAY COURSES	PART-TIME AFTERNOON OR EVENING COURSES
A four-year college, *e.g.*, liberal arts, education, nursing, engineering	(1)	(2)
A junior college, community college or technical institute	(3)	(4)
Some other type of school (business school, nurse school, trade school etc.)	(5)	(6)

[OVER]

KEIS-Ap56-60,000(39458)*

15. If you checked NO to question 13, check the one statement below which best fits your situation.

I have no interest in going to college ..... (1)
I would go to college if I could afford it ..... (2)
I would go to college if one was nearby which I could attend while living at home ..... (3)
My family needs the financial help that I can give by working ..... (4)
I plan to enter the armed services ..... (5)
I am going to be married ..... (6)
My parents do not want me to go to college ..... (7)
I have been advised not to go to college ..... (8)
My reason for not going to college is different from any of the above ..... (9)

Answer the following only if you plan to go to college.

---

16. Check the location of the college you are most likely to attend.

In your hometown, county, or within daily travel distance ..... (1)
Any other location in New York State ..... (2)
In any other State or country ..... (3)

17. Check the kind of college you are most likely to attend.

Public ..... (1) Private ..... (2) Not sure which kind ..... (3)

18. Check the field of study you will most likely start with in college.

Liberal arts (including preprofessional) ..... (1)
Teacher education ..... (2)
Business and accounting ..... (3)
Engineering ..... (4)
Nursing ..... (5)
Any other field (*specify and check*) ..... (6)

The next item is to be supplied by the high school.

19-20. N. Y. S. S. A. T. — Percentile rating for total score .....

Return to the Bureau of Statistical Services, State Education Department, Albany 1.

APPENDIX D

Tables for Part I, High School Senior Information

TABLE 1
High school graduates by economic areas and sample in the study

ECONOMIC AREA	ESTIMATED NUMBER OF HIGH SCHOOL GRADUATES 1956	NUMBER IN SAMPLE	PERCENT IN SAMPLE
Binghamton	3,100	2,139	69
Capital District	5,750	2,476	43
Elmira	2,450	1,485	61
Mid-Hudson	4,530	3,653	81
Mohawk Valley	3,360	2,147	64
New York Metropolitan			
Nassau County	7,800	4,483	58
Suffolk County	3,140	1,933	62
Rockland County	700	325	46
Westchester County	7,100	2,747	39
New York City	55,000	8,830*	16
Niagara Frontier	9,450	5,503	58
Northern	2,990	2,160	72
Rochester	6,670	4,801	72
Southwest Gateway	2,470	1,774	72
Syracuse	4,870	2,952	61
UPSTATE Subtotal	63,680	40,971	64
Total	118,680	49,801	42

* The New York City sample of 8,830 is adjusted to 26,570 in order to equate public and private high school graduates in the correct proportion.

TABLE 2

Percentage distribution of high school graduates according to posthigh school plan, by area and type of program

ECONOMIC AREA	NO. OF HIGH SCH. GRADS. IN SAMPLE	PERCENTAGE OF HIGH SCHOOL GRADUATES[1]				
		NOT PLANNING TO ATTEND	PLANNING TO ATTEND FULL- AND PART-TIME			NO RESPONSE
			FOUR YEAR COLLEGES	TWO YEAR COLLEGES	OTHER INSTITUTIONS	
Binghamton	2,139	52%	25%	10%	12%	1%
Capital District	2,476	51	29	7	12	1
Elmira	1,485	54	27	7	11	*
Mid-Hudson	3,653	48	30	10	12	*
Mohawk Valley	2,147	53	27	9	11	*
New York Metropolitan						
New York City	26,570[a]	37	46	7	10	*
Nassau	4,483	37	48	7	8	*
Suffolk	1,933	50	34	6	10	*
Rockland	325	46	38	7	9	*
Westchester	2,747	36	48	7	10	*
Niagara Frontier	5,503	44	37	8	11	*
Northern	2,160	52	25	8	15	1
Rochester	4,801	47	34	7	12	*
Southwest Gateway	1,774	49	28	9	13	*
Syracuse	2,952	48	33	8	11	*

* = Less than 0.5 percent.
[1] Percents have been rounded to the nearest whole number. Totals, therefore, do not always add to 100%.
[a] Adjusted.

TABLE 3

Percentage distribution of high school graduates according to posthigh school plan, by area and location of college,

1956

ECONOMIC AREA	NUMBER OF HIGH SCH. GRADUATES IN SAMPLE	PERCENTAGE OF HIGH SCHOOL GRADUATES[1]				
		NOT PLANNING TO ATTEND	LOCATION OF COLLEGE			
			AT LOCAL COLLEGE	OTHER COLLEGES IN N.Y.S.	COLLEGES OUTSIDE N.Y.S.	NO DECISION
Binghamton	2,139	52%	15%	24%	7%	2%
Capital District	2,476	51	19	18	10	2
Elmira	1,485	54	13	23	8	2
Mid-Hudson	3,653	48	12	26	13	2
Mohawk Valley	2,147	53	14	24	8	1
New York Metropolitan						
New York City	26,570[a]	37	49	5	7	3
Nassau	4,483	37	23	16	24	*
Suffolk	1,933	50	14	20	15	1
Rockland	325	46	9	25	19	1
Westchester	2,747	36	19	16	29	*
Niagara Frontier	5,503	44	35	10	9	2
Northern	2,160	52	15	25	7	2
Rochester	4,801	47	21	20	10	2
Southwest Gateway	1,774	49	14	24	11	2
Syracuse	2,952	48	22	18	9	2

[1] Rounded percentages may not add to 100.
[a] Adjusted to equate public and private high school graduates in the correct proportion.
* = Less than 0.5 percent.

TABLE 4

Percentage distribution of upstate New York high school graduates according to ability test score, by father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	PERCENTAGE OF GRADUATES WHO SCORED IN:		
		2 TOP DECILES	4 MIDDLE DECILES	4 LOWEST DECILES
Professional and executive	6,357	44.9	41.3	13.8
Proprietor and manager	8,552	22.2	45.6	32.2
Clerical and sales	5,049	27.2	47.7	25.1
Skilled and semiskilled	12,541	16.1	44.8	39.1
Unskilled	7,316	13.9	42.4	43.7
Total	39,815[a]	23.0	44.3	32.7

[a] Excluding 1,156 graduates with no test score or information on father's occupation.

TABLE 5

Percentage distribution of upstate New York high school graduates according to plans to continue education, by father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	PERCENTAGE OF GRADUATES WHO:		
		DEFINITELY CONTINUE	PROBABLY CONTINUE	DO NOT CONTINUE
Professional and executive	6,432	71.0	12.4	16.6
Proprietor and manager	8,657	44.9	15.7	39.4
Clerical and sales	5,093	45.0	17.2	37.8
Skilled and semiskilled	12,718	26.1	16.7	57.2
Unskilled	7,425	21.8	14.8	63.4
Total	40,325[a]	38.9	15.5	45.6

[a] Excluding 646 graduates with no information on father's occupation.

TABLE 6

Number of upstate New York high school graduates and percentage planning to continue education, by ability test score and father's occupation, 1956

FATHER'S OCCUPATION	GRADUATES WHO SCORED ON ABILITY TEST IN:					
	2 TOP DECILES		4 MIDDLE DECILES		4 LOWEST DECILES	
	NUMBER	PERCENT CONTINUING	NUMBER	PERCENT CONTINUING	NUMBER	PERCENT CONTINUING
Professional and executive	2,855	95.0	2,626	79.9	876	56.4
Proprietor and manager	1,900	87.1	3,897	64.2	2,755	37.1
Clerical and sales	1,372	85.5	2,410	62.4	1,267	36.8
Skilled and semiskilled	2,018	71.6	5,619	48.0	4,904	24.9
Unskilled	1,020	68.7	3,097	42.2	3,199	21.5
Total	9,165	83.8	17,649	57.3	13,001	29.9

TABLE 7

Percentage distribution of high school graduates from upstate New York (exclusive of New York Metropolitan Area) who plan to continue education according to type of institution, by sex and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
Male				
Professional and executive	1,606	84.9	10.3	4.8
Proprietor and manager	1,878	68.4	20.8	10.8
Clerical and sales	1,099	72.9	18.3	8.8
Skilled and semiskilled	2,172	58.4	27.6	14.0
Unskilled	1,027	57.9	26.7	15.4
Total male	7,782	68.3	20.9	10.8
Female				
Professional and executive	1,499	76.0	8.3	15.7
Proprietor and manager	2,054	54.8	12.4	32.8
Clerical and sales	1,138	55.8	11.2	33.0
Skilled and semiskilled	2,219	42.3	11.4	46.3
Unskilled	1,140	40.7	11.8	47.5
Total female	8,050	53.5	11.1	35.4

TABLE 8

Percentage distribution of high school graduates from New York Metropolitan Area (exclusive of New York City) who plan to continue education according to type of institution, by sex and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
Male				
Professional and executive	1,182	91.1	6.0	2.9
Proprietor and manager	681	81.0	11.5	7.5
Clerical and sales	497	80.7	12.5	6.8
Skilled and semiskilled	545	69.0	20.0	11.0
Unskilled	269	69.9	19.3	10.8
Total male	3,174	81.7	11.7	6.6
Female				
Professional and executive	1,051	75.7	12.9	11.4
Proprietor and manager	597	62.2	16.4	21.4
Clerical and sales	412	60.0	10.9	29.1
Skilled and semiskilled	465	44.5	10.8	44.7
Unskilled	259	45.2	8.5	46.3
Total female	2,784	62.4	12.6	25.0

TABLE 9

Percentage distribution of upstate high school graduates definitely planning to continue education according to type of institution and classified by scholastic aptitude and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER	PERCENTAGE OF GRADUATES CHOOSING		
		4-YEAR COLLEGE	2-YEAR COLLEGE	OTHER SCHOOLS
GRADUATES SCORING IN 2 TOP DECILES ON SCHOLASTIC APTITUDE				
Professional and executive	2,520	94.0	3.1	2.9
Proprietor and manager	1,440	87.0	6.3	6.7
Clerical and sales	1,005	86.4	5.4	8.2
Skilled and semiskilled	1,144	74.2	10.5	15.3
Unskilled	544	76.8	10.3	12.9
Total	6,653	86.5	6.0	7.5
GRADUATES SCORING IN 4 MIDDLE DECILES ON SCHOLASTIC APTITUDE				
Professional and executive	1,684	79.9	11.2	8.9
Proprietor and manager	1,868	70.0	14.9	15.1
Clerical and sales	1,070	67.5	13.7	18.8
Skilled and semiskilled	1,659	57.5	16.8	25.7
Unskilled	796	56.8	17.1	26.1
Total	7,077	67.6	14.5	17.9
GRADUATES SCORING IN 4 LOWEST DECILES ON SCHOLASTIC APTITUDE				
Professional and executive	306	57.6	26.1	16.3
Proprietor and manager	530	41.7	27.2	31.1
Clerical and sales	197	49.2	25.4	25.4
Skilled and semiskilled	466	40.5	24.5	35.0
Unskilled	270	34.8	21.9	43.3
Total	1,769	43.9	25.3	30.8

TABLE 10

Percentage distribution of upstate high school graduates definitely planning to continue education according to type of institution and classified by sex, scholastic aptitude and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER	PERCENTAGE OF BOYS CHOOSING			NUMBER	PERCENTAGE OF GIRLS CHOOSING		
		4-YEAR COLLEGE	2-YEAR COLLEGE	OTHER SCHOOLS		4-YEAR COLLEGE	2-YEAR COLLEGE	OTHER SCHOOLS
GRADUATES SCORING IN 2 TOP DECILES ON SCHOLASTIC APTITUDE								
Professional and executive	1,346	96.6	2.4	1.0	1,174	91.0	3.9	5.1
Proprietor and manager	729	92.2	5.9	1.9	711	81.7	6.6	11.7
Clerical and sales	518	94.0	5.6	0.4	487	78.5	5.1	16.4
Skilled and semiskilled	577	83.0	13.0	4.0	567	65.3	7.9	26.8
Unskilled	264	86.4	10.6	3.0	280	67.9	10.0	22.1
Total	3,434	92.3	6.0	1.7	3,219	80.5	5.9	13.6
GRADUATES SCORING IN 4 MIDDLE DECILES ON SCHOLASTIC APTITUDE								
Professional and executive	835	86.9	9.3	3.8	849	73.1	13.0	13.9
Proprietor and manager	856	80.7	15.3	4.0	1,012	60.8	14.6	24.6
Clerical and sales	501	78.6	14.6	6.8	569	57.7	13.0	29.3
Skilled and semiskilled	757	69.6	23.1	7.3	902	47.5	11.4	41.1
Unskilled	355	69.0	24.2	6.8	441	47.0	11.3	41.7
Total	3,304	78.2	16.4	5.4	3,773	58.2	12.9	28.9
GRADUATES SCORING IN 4 LOWEST DECILES ON SCHOLASTIC APTITUDE								
Professional and executive	119	65.6	25.2	9.2	187	52.4	26.7	20.9
Proprietor and manager	213	54.9	31.0	14.1	317	32.8	24.6	42.6
Clerical and sales	93	57.0	31.2	11.8	104	42.3	20.2	37.5
Skilled and semiskilled	213	53.5	32.4	14.1	253	29.6	17.8	52.6
Unskilled	104	47.1	34.6	18.3	166	27.1	13.9	59.0
Total	742	55.4	31.0	13.6	1,027	35.6	21.1	43.3

TABLE 11

Percentage distribution of upstate high school graduates definitely planning to attend college according to type and auspices of educational institution, and classified by sex, scholastic aptitude and father's occupation, 1956

SEX, APTITUDE SCORE AND FATHER'S OCCUPATION	4-YEAR DEGREE COLLEGE				2-YEAR DEGREE COLLEGE			
	NUMBER	PERCENT CHOOSING			NUMBER	PERCENT CHOOSING		
		PUBLIC	PRIVATE	NO CHOICE		PUBLIC	PRIVATE	NO CHOICE
Boys in 2 top deciles								
Professional and executive	1,289	18.4	77.5	4.1	32	46.9	40.6	12.5
Proprietor, sales and clerical	11,153	24.5	70.8	4.7	72	72.2	20.8	7.0
Manual worker	702	28.6	66.7	4.7	103	75.7	20.4	3.9
Total	3,144	22.9	72.6	4.5	207	70.0	23.7	6.3
Girls in 2 top deciles								
Professional and executive	1,052	26.6	69.7	3.7	46	34.8	63.0	2.2
Proprietor, sales and clerical	952	40.4	56.4	3.2	72	47.2	43.1	9.7
Manual worker	556	53.6	43.5	2.9	72	79.2	13.9	6.9
Total	2,560	37.6	59.1	3.3	190	56.4	36.8	6.8
Boys in 4 middle deciles								
Professional and executive	714	27.3	64.0	8.7	78	62.8	34.6	2.6
Proprietor, sales and clerical	1,069	34.6	57.8	7.6	205	73.7	18.0	8.3
Manual worker	761	40.1	53.2	6.7		82.4	10.7	6.9
Total	2,544	34.2	58.2	7.6	544	76.3	16.9	6.8

SEX, APTITUDE SCORE AND FATHER'S OCCUPATION	4-YEAR DEGREE COLLEGE				2-YEAR DEGREE COLLEGE			
	NUMBER	PERCENT CHOOSING			NUMBER	PERCENT CHOOSING		
		PUBLIC	PRIVATE	NO CHOICE		PUBLIC	PRIVATE	NO CHOICE
Girls in 4 middle deciles								
Professional and executive	607	41.5	55.2	3.3	110	23.6	69.1	7.3
Proprietor, sales and clerical	920	54.3	42.9	2.8	222	50.5	43.2	6.3
Manual worker	628	67.7	29.6	2.7	153	68.6	25.5	5.9
Total	2,155	54.6	42.5	2.9	485	50.1	43.5	6.4
Boys in 4 lowest deciles								
Professional and executive	76	31.6	51.3	17.1	30	63.3	30.0	6.7
Proprietor, sales and clerical	164	37.8	51.2	11.0	94	72.4	13.8	13.8
Manual worker	159	50.3	41.5	8.2	105	76.2	18.1	5.7
Total	399	41.6	47.4	11.0	229	72.9	17.9	9.2
Girls in 4 lowest deciles								
Professional and executive	93	40.9	41.9	17.2	50	18.0	72.0	10.0
Proprietor, sales and clerical	144	61.8	37.5	0.7	95	43.2	46.3	10.5
Manual worker	118	64.4	29.7	5.9	68	77.9	16.2	5.9
Total	355	57.2	36.0	6.8	213	48.4	42.7	8.9

TABLE 12

Percentage distribution of high school graduates from upstate New York (exclusive of New York Metropolitan Area) planning to continue education according to selected fields of study, by sex and father's occupation, 1956

PLANNED FIELD OF STUDY	FATHER'S OCCUPATION				
	PROFESSIONAL AND EXECUTIVE	PROPRIETOR AND MANAGER	CLERICAL AND SALES	SKILLED AND SEMI-SKILLED	UNSKILLED
Boys					
Liberal arts	41.2	24.1	28.3	18.6	17.3
Engineering	28.3	28.1	28.4	33.9	29.4
Business and accounting	10.6	18.7	17.1	13.6	13.5
Teacher education	5.5	7.0	8.6	11.5	13.7
Other fields	14.4	22.1	17.6	22.4	26.1
Total boys	100.0	100.0	100.0	100.0	100.0
Number	1,593	1,848	1,089	2,113	997
Girls					
Liberal arts	39.1	18.4	17.6	10.4	7.9
Nursing	14.5	18.6	20.5	24.9	26.0
Business and accounting	9.1	19.3	16.5	21.5	21.6
Teacher education	23.3	27.2	30.9	25.8	25.8
Other fields	14.0	16.5	14.5	17.4	18.7
Total girls	100.0	100.0	100.0	100.0	100.0
Number	1,466	2,002	1,089	2,129	1,085

TABLE 13

Percentage distribution of high school graduates from New York Metropolitan Area (exclusive of New York City) planning to continue education according to selected fields of study, by sex and father's occupation, 1956

PLANNED FIELD OF STUDY	FATHER'S OCCUPATION				
	PROFESSIONAL AND EXECUTIVE	PROPRIETOR AND MANAGER	CLERICAL AND SALES	SKILLED AND SEMI-SKILLED	UNSKILLED
Boys					
Liberal arts	41.8	31.5	29.4	19.1	19.9
Engineering	26.5	25.1	26.5	34.7	25.4
Business and accounting	15.7	23.1	18.4	13.6	17.2
Teacher education	3.7	4.7	7.9	10.2	14.8
Other fields	12.3	15.6	17.8	22.4	22.7
Total boys	100.0	100.0	100.0	100.0	100.0
Number	1,166	658	483	528	256
Girls					
Liberal arts	49.9	28.8	26.8	10.1	14.3
Nursing	7.2	10.8	14.7	24.6	17.9
Business and accounting	7.3	15.8	12.9	18.1	19.3
Teacher education	20.3	27.6	31.3	28.9	31.0
Other fields	15.3	17.0	14.3	18.3	17.5
Total girls	100.0	100.0	100.0	100.0	100.0
Number	1,009	565	380	415	223

TABLE 14

Percentage distribution of upstate high school graduates definitely planning to continue education according to fields of study and classified by sex, scholastic aptitude and father's occupation, 1956

SEX, APTITUDE SCORE AND FATHER'S OCCUPATION	NUMBER	PERCENTAGE OF GRADUATES CHOOSING					
		LIBERAL ARTS	ENGINEERING	BUSINESS AND ACCOUNTING	TEACHER EDUCATION	NURSING	OTHER
Boys in 2 top deciles							
Professional and executive	1,338	49.8	31.5	6.5	2.8	0.1	9.3
Prop., sales and clerical	1,246	35.3	37.4	9.6	4.3	0.2	13.2
Manual worker	837	28.1	40.1	6.3	8.2	—	17.3
Total	3,421	39.2	35.7	7.6	4.7	0.1	12.7
Girls in 2 top deciles							
Professional and executive	1,166	58.2	0.7	3.3	18.4	8.2	11.2
Prop., sales and clerical	1,191	34.8	1.1	6.4	31.2	14.5	12.0
Manual worker	842	21.8	0.7	9.7	31.1	22.7	14.0
Total	3,199	39.9	0.8	6.1	26.5	14.4	12.3
Boys in 4 middle deciles							
Professional and executive	829	37.4	23.9	17.4	5.7	0.2	15.4
Prop., sales and clerical	1,342	29.1	24.2	20.0	8.6	0.2	17.9
Manual worker	1,100	19.5	32.3	13.3	14.8	0.6	19.5
Total	3,271	28.1	26.8	17.1	9.9	0.3	17.8
Girls in 4 middle deciles							
Professional and executive	839	34.1	0.2	7.7	26.8	15.0	16.2
Prop., sales and clerical	1,566	16.7	0.1	15.9	32.8	21.8	12.7
Manual worker	1,321	7.0	0.2	16.1	33.1	29.2	14.4
Total	3,726	17.1	0.2	14.1	31.6	22.9	14.1
Boys in 4 lowest deciles							
Professional and executive	115	22.6	18.3	35.6	6.1	0.9	16.5
Prop., sales and clerical	297	17.2	12.1	32.3	11.4	0.7	26.3
Manual worker	317	13.9	19.9	21.8	15.1	0.9	28.4
Total	729	16.6	16.5	28.2	12.2	0.8	25.7
Girls in 4 lowest deciles							
Professional and executive	180	16.7	0.6	20.6	24.3	16.1	21.7
Prop., sales and clerical	409	10.3	—	25.2	24.7	15.6	23.3
Manual worker	406	4.7	—	25.6	17.7	25.6	26.4
Total	995	9.1	0.1	24.6	21.8	20.2	24.2

TABLE 15

Percentage distribution of high school graduates from upstate New York (exclusive of New York Metropolitan Area) who plan to continue education according to location of institution, by sex and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	LOCATION OF INSTITUTION		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Male				
Professional and executive	1,593	24.7	36.5	38.8
Proprietor and manager	1,843	34.2	43.8	22.0
Clerical and sales	1,086	41.5	33.8	24.7
Skilled and semiskilled	2,116	47.6	36.2	16.2
Unskilled	992	48.5	34.9	16.6
Total male	7,630	38.8	37.6	23.6
Female				
Professional and executive	1,463	28.0	42.5	29.5
Proprietor and manager	1,998	37.1	47.2	15.7
Clerical and sales	1,091	46.6	41.6	11.8
Skilled and semiskilled	2,118	52.4	38.9	8.7
Unskilled	1,083	51.3	41.1	7.6
Total female	7,753	42.9	42.4	14.7

TABLE 16

Percentage distribution of high school graduates from New York Metropolitan Area (exclusive of New York City) who plan to continue education according to location of institution, by sex and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	LOCATION OF INSTITUTION		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Male				
Professional and executive	1,161	18.2	22.1	59.7
Proprietor and manager	656	30.9	25.5	43.6
Clerical and sales	477	34.8	27.3	37.9
Skilled and semiskilled	524	48.7	26.1	25.2
Unskilled	256	44.1	30.1	25.8
Total male	3,074	30.8	25.0	44.2
Female				
Professional and executive	1,009	20.1	28.9	51.0
Proprietor and manager	561	35.3	32.6	32.1
Clerical and sales	379	37.7	34.8	27.5
Skilled and semiskilled	415	49.2	39.5	11.3
Unskilled	217	53.4	34.6	12.0
Total female	2,581	33.5	32.8	33.7

TABLE 17

Percentage distribution of upstate high school graduates definitely planning to continue education according to location of college and classified by scholastic aptitude and father's occupation, 1956

FATHER'S OCCUPATION	2 TOP DECILES			4 MIDDLE DECILES			4 LOWEST DECILES		
	GOING TO COLLEGES			GOING TO COLLEGES			GOING TO COLLEGES		
	NUMBER	IN THE STATE	OUTSIDE THE STATE	NUMBER	IN THE STATE	OUTSIDE THE STATE	NUMBER	IN THE STATE	OUTSIDE THE STATE
		PERCENT	PERCENT		PERCENT	PERCENT		PERCENT	PERCENT
Professional	2,499	52.7	47.3	1,674	56.9	43.1	296	58.1	41.9
Proprietor and manager	1,431	71.5	28.5	1,851	76.3	23.7	522	74.1	25.9
Clerical and sales	997	72.7	27.3	1,055	76.5	23.5	190	83.2	16.8
Skilled and semiskilled	1,140	80.8	19.2	1,640	87.1	12.9	460	85.2	14.8
Unskilled	540	85.2	14.8	783	86.6	13.4	261	85.4	14.6
All graduates	6,607	67.3	32.7	7,003	75.4	24.6	1,729	77.0	23.0

TABLE 18

Percentage distribution of upstate high school graduates definitely planning to continue education according to location of college, and classified by scholastic aptitude, sex and father's occupation, 1956

FATHER'S OCCUPATION	2 TOP DECILES			4 MIDDLE DECILES			4 LOWEST DECILES		
	GOING TO COLLEGES			GOING TO COLLEGES			GOING TO COLLEGES		
	NUMBER	IN THE STATE	OUTSIDE THE STATE	NUMBER	IN THE STATE	OUTSIDE THE STATE	NUMBER	IN THE STATE	OUTSIDE THE STATE
		PERCENT	PERCENT		PERCENT	PERCENT		PERCENT	PERCENT
BOYS									
Professional	1,335	47.9	52.1	830	50.6	49.4	116	55.2	44.8
Proprietor and manager	726	66.9	33.1	847	70.0	30.0	212	70.8	29.2
Clerical and sales	515	64.7	35.3	492	68.1	31.9	90	77.8	22.2
Skilled and semiskilled	576	73.4	26.6	752	81.8	18.2	214	78.5	21.5
Unskilled	262	78.2	21.8	353	79.9	20.1	101	77.2	22.8
Total	3,414	61.1	38.9	3,274	68.6	31.4	733	72.3	27.7
GIRLS									
Professional	1,164	58.1	41.9	844	63.0	37.0	180	60.0	40.0
Proprietor and manager	705	76.2	23.8	1,004	81.6	18.4	310	76.5	23.5
Clerical and sales	482	81.3	18.7	563	83.8	16.2	100	88.0	12.0
Skilled and semiskilled	564	88.3	11.7	888	91.7	8.3	246	91.1	8.9
Unskilled	278	91.7	8.3	430	92.1	7.9	160	90.6	9.4
Total	3,193	73.8	26.2	3,729	81.3	18.7	996	80.5	19.5

TABLE 19

Percentage distribution of upstate New York high school graduates planning to continue education according to kind of institution, by geographic subareas and father's occupation, 1956

FATHER'S OCCUPATION	NUMBER IN SAMPLE	KIND OF INSTITUTION		
		PUBLIC	PRIVATE	NO CHOICE
GRADUATES FROM NEW YORK METROPOLITAN AREA (EXCLUSIVE OF NEW YORK CITY)				
Professional and executive	2,155	22.5	69.8	7.7
Proprietor and manager	1,211	28.4	60.9	10.7
Clerical and sales	846	33.0	55.3	11.7
Skilled and semiskilled	930	45.7	42.6	11.7
Unskilled	469	44.5	36.5	19.0
Total	5,611	31.0	58.4	10.6
GRADUATES FROM UPSTATE NEW YORK (EXCLUSIVE OF NEW YORK METROPOLITAN AREA)				
Professional and executive	3,037	34.9	56.7	8.4
Proprietor and manager	3,824	46.8	42.4	10.8
Clerical and sales	2,159	44.2	46.3	9.5
Skilled and semiskilled	4,209	50.6	36.8	12.6
Unskilled	2,059	53.6	33.4	13.0
Total	15,288	46.0	43.1	10.9

Table 20

Percentage distribution of upstate high school graduates definitely planning to attend college according to type and auspices of educational institution, by scholastic aptitude and father's occupation, 1956

Father's occupation	4-year degree college				2-year degree college			
	Number	Percent choosing			Number	Percent choosing		
		Public	Private	No choice		Public	Private	No choice
Graduates scoring in 2 top deciles on scholastic aptitude								
Professional and executive	2,341	22.1	74.0	3.9	78	39.7	53.9	6.4
Proprietor and manager	1,245	32.5	63.6	3.9	90	53.3	35.6	11.1
Clerical and sales	860	30.5	65.4	4.1	54	70.4	25.9	3.7
Skilled and semiskilled	843	38.1	57.7	4.2	119	76.5	19.3	4.2
Unskilled	415	42.9	53.7	3.4	56	78.6	14.3	7.1
Total	5,704	29.5	66.6	3.9	397	63.5	30.0	6.5
Graduates scoring in 4 middle deciles on scholastic aptitude								
Professional and executive	1,321	33.8	60.0	6.2	188	39.9	54.8	5.3
Proprietor and manager	1,280	43.9	50.9	5.2	279	59.8	33.0	7.2
Clerical and sales	709	43.3	51.1	5.6	148	64.9	27.7	7.4
Skilled and semiskilled	946	49.4	45.7	4.9	278	77.0	16.5	6.5
Unskilled	443	59.1	35.9	5.0	136	78.0	15.4	6.6
Total	4,699	43.5	51.0	5.5	1,029	64.0	29.4	6.6
Graduates scoring in 4 lowest deciles on scholastic aptitude								
Professional and executive	169	36.7	46.1	17.2	80	35.0	56.2	8.8
Proprietor and manager	214	48.2	45.3	6.5	142	54.9	33.1	12.0
Clerical and sales	94	51.1	43.6	5.3	47	65.9	21.3	12.8
Skilled and semiskilled	185	55.2	38.9	5.9	114	77.2	17.5	5.3
Unskilled	92	58.7	31.5	9.8	59	76.3	16.9	6.8
Total	754	49.0	42.0	9.0	442	61.1	29.9	9.0

TABLE 21

Percentage distribution of upstate New York high school graduates according to college plan, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	COLLEGE PLAN		
		DEFINITELY GOING	PROBABLY GOING	NOT GOING
90–99	5,086	79%	10%	11%
70–89	8,446	59	14	27
50–69	9,494	40	18	42
30–49	8,138	23	17	60
10–29	7,454	12	16	72
01–09	1,835	7	15	78
Total	40,971[a]	38	16	46

a Includes 518 graduates without tests scores.

TABLE 22

Percentage distribution of New York City high school graduates according to college plan, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	COLLEGE PLAN		
		DEFINITELY GOING	PROBABLY GOING	NOT GOING
90–99	4,617	80%	10%	10%
70–89	6,618	60	18	22
50–69	6,222	40	22	38
30–49	4,291	24	24	52
10–29	3,696	15	20	65
01–09	912	7	13	80
Total	26,572[a]	44	19	37

a Includes 216 graduates with no test score.

NOTE: The sample 26,572, is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 23

Percentage distribution of upstate New York high school graduates definitely planning to continue education according to kind of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	KIND OF INSTITUTION		
		PUBLIC	PRIVATE	NO CHOICE
90–99	4,006	28%	68%	4%
70–89	4,878	39	55	6
50–69	3,696	47	47	6
30–49	1,800	50	41	9
10–29	845	50	39	11
01–09	126	47	41	12
Total	15,501[a]	40	54	6

a Includes 150 graduates without test scores.

TABLE 24

Percentage distribution of New York City high school graduates definitely planning to continue education according to kind of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	KIND OF INSTITUTION		
		PUBLIC	PRIVATE	NO CHOICE
90–99	3,634	41%	53%	6%
70–89	3,888	51	39	10
50–69	2,439	48	40	12
30–49	1,005	50	40	10
10–29	518	46	38	16
01–09	55	51	35	14
Total	11,591[a]	47	43	10

a Includes 52 graduates without test scores.

NOTE: The sample 11,591, is adjusted to equate graduates from public and private schools in the correct proportion.

TABLE 25

Percentage distribution of upstate New York high school graduates definitely planning to continue education according to location of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	LOCATION OF INSTITUTION		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
90–99	4,022	25%	40%	35%
70–89	4,908	33	38	29
50–69	3,731	38	39	23
30–49	1,825	40	36	24
10–29	858	43	36	21
01–09	128	44	32	24
Total	15,624[a]	34	38	28

a Includes 152 graduates without test scores.

TABLE 26

Percentage distribution of New York City high school graduates definitely planning to continue education according to location of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	LOCATION OF INSTITUTION		
		NEW YORK CITY	ELSEWHERE IN NEW YORK ST.	OUTSIDE NEW YORK STATE
90–99	3,659	68%	13%	19%
70–89	3,902	80	8	12
50–69	2,476	83	7	10
30–49	1,006	84	9	7
10–29	526	86	8	6
01–09	55	94	4	2
Total	11,676[a]	77	10	13

a Includes 52 graduates with no test score.

NOTE: The sample 11,676 is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 27

Percentage distribution of upstate New York high school graduates definitely planning to continue education full-time according to type of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
90–99	4,031	90%	4%	6%
70–89	4,919	79	10	11
50–69	3,735	66	15	19
30–49	1,813	55	21	24
10–29	848	42	28	30
01–09	125	22	27	51
Total	15,626[a]	73	12	15

[a] Includes 155 graduates without test scores.

TABLE 28

Percentage distribution of New York City high school graduates definitely planning to continue education full-time according to type of institution, by ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
90–99	3,590	96%	2%	2%
70–89	3,707	88	5	7
50–69	2,238	77	10	13
30–49	863	68	19	13
10–29	454	56	28	16
01–09	39	26	54	20
Total	10,943[a]	85	7	8

[a] Includes 52 graduates with no test score.

NOTE: The sample 10,943 is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 29

Percentage distribution of upstate New York high school graduates definitely planning to enter selected fields of study according to ability test score

1956

FIELD OF STUDY	NUMBER IN SAMPLE	PERCENTILE TEST SCORE					
		01–09	10–29	30–49	50–69	70–89	90–99
Business and accounting	2,013	2%	12%	20%	29%	26%	11%
Liberal arts	4,410	*	2	7	17	33	41
Nursing	1,550	1	6	15	31	32	15
Teacher education	2,842	1	5	13	30	33	18

* Less than .5%.

TABLE 30

Percentage distribution of New York City high school graduates definitely planning to enter selected fields of study according to ability test score

1956

FIELD OF STUDY	NUMBER IN SAMPLE	PERCENTILE TEST SCORE					
		01–09	10–29	30–49	50–69	70–89	90–99
Business and accounting	1,923	1%	9%	16%	30%	32%	12%
Liberal arts	4,475	1	2	4	16	34	43
Nursing	391	0	4	11	34	39	12
Teacher education	1,625	0	4	10	23	41	22

NOTE: The New York City sample is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 31

Percentage distribution of New York State high school graduates who chose engineering according to ability test score

1956

PERCENTILE TEST SCORE	GRADUATES FROM NEW YORK CITY: DEFINITELY GOING	GRADUATES FROM NEW YORK CITY: PROBABLY GOING	GRADUATES FROM UPSTATE NEW YORK: DEFINITELY GOING	GRADUATES FROM UPSTATE NEW YORK: PROBABLY GOING
90–99	45%	13%	36%	13%
70–89	29	25	36	26
50–69	16	32	19	30
30–49	6	20	7	19
10–29	3	9	2	11
01–09	1	1	*	1
Total	100	100	100	100
Number in sample	1,730[a]	530[b]	2,287[c]	937[d]

* Less than 0.5%.
a Includes 8 graduates without test scores.
b Includes 17 graduates without test scores.
c Includes 14 graduates without test scores.
d Includes 21 graduates without test scores.

NOTE: The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 32

Percentage distribution of upstate New York high school graduates definitely planning to continue education full-time according to type of institution, by kind of college

1956

TYPE OF INSTITUTION	NUMBER IN SAMPLE	KIND OF COLLEGE: PUBLIC	KIND OF COLLEGE: PRIVATE	KIND OF COLLEGE: NO CHOICE
Four-year degree	11,326	37%	58%	5%
Two-year degree	1,860	64	30	6
All others	2,134	35	54	11
Total	15,320	40	54	6

TABLE 33

Percentage distribution of New York City high school graduates definitely planning to continue education full-time according to type of institution, by kind of college

1956

TYPE OF INSTITUTION	NUMBER IN SAMPLE	KIND OF COLLEGE		
		PUBLIC	PRIVATE	NO CHOICE
Four-year degree	9,212	46%	45%	9%
Two-year degree	771	57	34	9
All others	755	33	51	16
Total	10,738	45	45	10

NOTE: The New York City sample is adjusted to equate public and private school graduates in the proper proportion.

TABLE 34

Percentage distribution of upstate New York high school graduates definitely planning to continue education according to selected fields of study, by kind of institution

1956

FIELD OF STUDY	NUMBER IN SAMPLE	KIND OF INSTITUTION		
		PUBLIC	PRIVATE	NO CHOICE
Business and accounting	2,024	34%	59%	7%
Liberal arts	4,425	18	76	6
Nursing	1,523	36	53	11
Teacher education	2,846	76	21	3

TABLE 35

Percentage distribution of New York City high school graduates definitely planning to continue education according to selected fields of study, by kind of institution

1956

FIELD OF STUDY	NUMBER IN SAMPLE	KIND OF INSTITUTION		
		PUBLIC	PRIVATE	NO CHOICE
Business and accounting	1,915	51%	40%	9%
Liberal arts	4,452	45	45	10
Nursing	368	29	46	25
Teacher education	1,615	65	29	6

NOTE: The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 36

Percentage distribution of New York State high school graduates who definitely chose engineering according to kind of institution

1956

KIND OF INSTITUTION	GRADUATES FROM	
	NEW YORK CITY	UPSTATE NEW YORK
Public	44%	33%
Private	45	60
No choice	11	7
Total	100	100
Number in sample	1,723[a]	2,271

[a] The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 37

Percentage distribution of upstate New York high school graduates definitely planning to continue education according to type of institution, by location of college

1956

KIND OF INSTITUTION	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Public	6,152	36%	48%	16%
Private	8,355	32	32	36
No choice	952	30	35	35
Total	15,459	34	38	28

TABLE 38

Percentage distribution of New York City high school graduates definitely planning to continue education according to kind of institution, by location of college

1956

KIND OF INSTITUTION	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		NEW YORK CITY	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Public	5,449	94%	3%	3%
Private	5,016	59	16	25
No choice	1,091	82	7	11
Total	11,556	77	10	13

NOTE: The sample 11,556 is adjusted to equate private and public school graduates in the correct proportion.

TABLE 39

Percentage distribution of upstate New York high school graduates definitely planning to continue education full-time according to type of institution, by location of college

1956

TYPE OF INSTITUTION	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Four-year degree	11,374	27%	40%	33%
Two-year degree	1,876	43	35	22
All others	2,186	55	35	10
Total	15,436	33	39	28

TABLE 40

Percentage distribution of New York City high school graduates definitely planning to continue education full-time according to type of institution, by location of college

1956

TYPE OF INSTITUTION	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		NEW YORK CITY	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Four-year degree	9,251	74%	10%	16%
Two-year degree	792	86	5	9
All others	774	91	5	4
Total	10,817	77	10	13

NOTE: The sample 10,817 is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 41

Percentage distribution of upstate New York high school graduates definitely planning to enter selected fields of study according to location of college

1956

FIELD OF STUDY	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		IN LOCAL AREA	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Business and accounting...	2,048	46%	27%	27%
Liberal arts	4,444	25	31	44
Nursing	1,551	50	41	9
Teacher education	2,859	32	57	11

TABLE 42

Percentage distribution of New York City high school graduates definitely planning to enter selected fields of study according to location of college

1956

FIELD OF STUDY	NUMBER IN SAMPLE	LOCATION OF COLLEGE		
		NEW YORK CITY	ELSEWHERE IN NEW YORK STATE	OUTSIDE NEW YORK STATE
Business and accounting...	1,927	89%	4%	7%
Liberal arts	4,478	72	9	19
Nursing	384	78	16	6
Teacher education	1,624	78	15	7

NOTE: The New York City sample is adjusted to equate public and private school graduates in the correct proportion.

TABLE 43

Percentage distribution of New York State high school graduates who definitely chose engineering according to location of institution

1956

LOCATION OF INSTITUTION	GRADUATES FROM	
	NEW YORK CITY	UPSTATE NEW YORK
Local area	75%	31%
Elsewhere in New York State	9	33
Outside New York State	16	36
Total	100	100
Number in sample	1,723[a]	2,277

[a] The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 44

Percentage distribution of upstate New York high school graduates planning to continue four-year education full-time according to selected fields of study, by type of institution

1956

FIELD OF STUDY	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
Business and accounting	1,995	44%	21%	35%
Liberal arts	4,443	94	5	1
Nursing	1,553	29	3	68
Teacher education	2,853	97	2	1

TABLE 45

Percentage distribution of New York City high school graduates planning to continue four-year education full-time according to selected fields of study, by type of institution

1956

FIELD OF STUDY	NUMBER IN SAMPLE	TYPE OF INSTITUTION		
		FOUR-YEAR DEGREE	TWO-YEAR DEGREE	ALL OTHERS
Business and accounting	1,564	67%	9%	24%
Liberal arts	4,294	98	2	*
Nursing	389	30	4	66
Teacher education	1,558	99	*	*

* = Less than 0.5%.

NOTE: The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 46

Percentage distribution of New York State high school graduates who chose engineering full-time according to type of institution

1956

TYPE OF INSTITUTION	GRADUATES FROM NEW YORK CITY	GRADUATES FROM UPSTATE NEW YORK
Four-year degree	95%	85%
Two-year degree	5	14
All others	*	1
Total	100	100
Number in sample	1,697[a]	2,255

* = Less than 0.5%.
[a] The New York City sample is adjusted to equate public and private high school graduates in the correct proportion.

TABLE 47

Percentage distribution of upstate New York high school graduates who did not plan to continue education according to ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	PERCENT
90–99	551	3
70–89	2,269	12
50–69	4,045	22
30–49	4,851	26
10–29	5,363	29
01–09	1,434	8
Total	18,779[a]	100

[a] Includes 266 graduates without test scores

TABLE 48

Percentage distribution of New York City high school graduates who did not plan to continue education according to ability test score

1956

PERCENTILE TEST SCORE	NUMBER IN SAMPLE	PERCENT
90–99	454	5
70–89	1,407	15
50–69	2,311	25
30–49	2,212	24
10–29	2,291	24
01–09	702	7
Total	9,357[a]	100

[a] Does not include 91 graduates without test scores.
NOTE: The New York City sample is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 49

Percentage distribution of upstate New York high school graduates who did not plan to continue education according to major reason for not continuing

1956

REASON	NUMBER IN SAMPLE	PERCENT
No interest	5,551	30
Would go if had money	1,941	10
Family needs financial support	1,272	7
Armed services	3,981	21
Marriage	1,342	7
All other reasons	4,662	25
Total	18,779	100

TABLE 50

Percentage distribution of New York City high school graduates who did not plan to continue education according to major reason for not continuing

1956

REASON	NUMBER IN SAMPLE	PERCENT
No interest	4,242	45
Would go if had money	458	5
Family needs financial assistance	1,165	12
Armed services	1,145	12
Marriage	497	5
All other reasons	1,961	21
Total	9,468	100

NOTE: The New York City sample is adjusted to equate graduates from private and public schools in the correct proportion.

TABLE 51

Percentage distribution of upstate New York high school graduates who did not plan to continue education according to major reasons for not continuing, by ability test score, sex and father's occupation, 1956

SEX, ABILITY TEST SCORE AND REASON	FATHER'S OCCUPATION				
	PROFESSIONAL AND EXECUTIVE	PROPRIETOR AND MANAGER	CLERICAL AND SALES	SKILLED AND SEMI-SKILLED	UNSKILLED
Boys in 2 top deciles					
No interest	7.8	14.8	11.9	11.5	15.6
Would go if had money	7.8	11.9	20.8	19.4	21.3
Family needs help	1.1	1.5	2.0	3.6	7.1
Armed service	50.0	49.6	45.5	44.3	33.3
All other reasons	33.3	22.2	19.8	21.2	22.7
Total	100.0	100.0	100.0	100.0	100.0
Number	90	135	101	279	141
Girls in 2 top deciles					
No interest	24.5	33.6	30.2	38.3	32.2
Would go if had money	8.2	18.3	22.9	18.9	22.4
Family needs help	4.1	6.7	6.3	7.5	9.2
Marriage	18.4	11.5	12.5	12.1	10.9
All other reasons	44.8	29.9	28.1	23.2	25.3
Total	100.0	100.0	100.0	100.0	100.0
Number	49	104	96	280	174
Boys in 4 middle deciles					
No interest	10.3	19.4	15.4	16.4	17.7
Would go if had money	6.6	8.9	9.5	12.6	13.2
Family needs help	2.3	2.4	3.0	5.3	5.0
Armed service	53.3	43.4	50.0	46.8	45.2
All other reasons	27.5	25.9	22.1	18.9	18.9
Total	100.0	100.0	100.0	100.0	100.0
Number	301	696	402	1,289	842
Girls in 4 middle deciles					
No interest	41.1	36.7	42.6	43.0	41.2
Would go if had money	7.2	11.4	13.9	13.1	13.0
Family needs help	3.4	4.9	8.7	7.9	10.3
Marriage	10.1	17.2	8.7	11.4	11.7
All other reasons	38.2	29.8	26.1	24.6	23.8
Total	100.0	100.0	100.0	100.0	100.0
Number	207	708	460	1,666	1,025

APPENDIX E

Premises To Serve as Guides for the Future of Higher Education in New York State

A set of suggested assumptions was prepared by the Staff for use at the conferences in each of the State's economic areas on higher education facilities and needs. The list of eight original assumptions studied by those participating, and discussed at each meeting, has been revised slightly in the light of suggestions made by those at the conferences. To that original list has been added the present last assumption, making a total of nine.

It is hoped that these assumptions will serve as useful guidelines for continuing consideration of the future of higher education throughout New York State.

1. Opportunities in higher education in the fields of study which are chosen by a *sizable* number of full-time undergraduate students should be provided on a decentralized basis in every area of concentrated population.* Opportunities in the fields of study chosen by a relatively *small* number of undergraduate students and by graduate students should be provided in one or more places on a centralized basis.

2. Decentralized opportunities provided in many places throughout the State should include courses covering at least the first two years of centralized opportunities. This will facilitate transfer of appropriate students into the junior year of centralized facilities.

3. At least the first two *preparatory* years of the following fields of study should be available in every area of concentrated population: liberal arts, teacher education, business and accounting, engineering and collegiate nursing. (These five fields of study accounted for 82 percent of certain high school seniors of 1953 who chose four-year colleges.)

4. The decentralized opportunities within an area may be provided by private colleges, public institutions or both.

5. In any economic area in which private colleges appear to be unable to meet the need for decentralized facilities, the gap should be filled by publicly-supported programs.

6. *Technical-Terminal* fields of study of two years duration or less should be provided also in every area of concentrated population where industrial and commercial demands require them. Consideration should be given to means by which such programs may be readily established in those localities where need exists. Such institutions would be of sufficient size and appropriate curriculum to meet the demands of industry and of population.

* The definition of concentrated population varies depending upon the field of study under consideration.

7. In order to assure sufficient assistance for college attendance by superior youth of inadequate financial means and to retain a freedom of choice for the individual, an expanded Regents Scholarship program based on need as well as quality is essential.

8. Existing institutions represent a substantial investment in faculties, facilities, and experience. Since it is an obligation of the Board of Regents and the State University Trustees to recognize and foster the historical development of higher education in this State, which has been accomplished largely through the establishment and encouragement of private institutions, additional ways and means must be found to assist colleges and universities under private auspices to accommodate future enrollments. As a corollary, such assistance should serve to protect without dislocation or distraction the invaluable accumulated organic experience of the staffs of our existing institutions.

9. Needs in certain areas of the State appear to be so substantial that immediate action is required to provide the facilities needed.

Prepared September 18, 1956
Revised November 10, 1956
Adopted by the Board of Regents
December 21, 1956

APPENDIX F

Facilities Reported by Higher Institutions, 1956

Estimate of full-time undergraduate facilities for technical-terminal programs in two-year colleges, 1955–70

TWO-YEAR COLLEGES	1955	1960	1965	1970
Binghamton Area				
Broome Technical Community College	340	900	900	900
SUNY Agricultural and Technical Institute at Delhi	325	375	375	375
Total	665	1,275	1,275	1,275
Capital District Area				
Hudson Valley Technical Institute	520	1,200	1,500	2,000
SUNY Agricultural and Technical Institute at Cobleskill	344	450	450	450
Total	864	1,650	1,950	2,450
Mid-Hudson Area				
Orange County Community College	360	450	675	675
Total	360	450	675	675
Mohawk Valley Area				
Mohawk Valley Technical Institute	700	1,250	1,250	1,250
Total	700	1,250	1,250	1,250
New York Area				
New York City				
Fashion Institute of Technology	466	1,250	1,250	2,500
New York City Community College of Applied Arts and Sciences	2,300	5,060	5,060	5,060
Staten Island Community College	—	800	800	1,000
Total	2,766	7,110	7,110	8,560
Nassau				
SUNY Agricultural and Technical Institute at Farmingdale	1,550	2,500	2,500	2,500
Total	1,550	2,500	2,500	2,500
Westchester				
Concordia Collegiate Institute	125	185	245	245
Westchester Community College	580	1,500	2,500	3,570
Total	705	1,685	2,745	3,815
Total New York Area	5,021	11,295	12,355	14,875

Estimate of full-time undergraduate facilities for technical-terminal programs in two-year colleges, 1955–70 (Concluded)

TWO-YEAR COLLEGES	1955	1960	1965	1970
Niagara Frontier Area				
Erie County Technical Institute	875	2,055	2,500	3,000
Total	875	2,055	2,500	3,000
Northern Area				
Paul Smith's College of Arts and Sciences	270	325	405	405
SUNY Agricultural and Technical Institute at Canton	475	600	600	600
Total	745	925	1,005	1,005
Rochester Area	—	—	—	—
Southwest Gateway Area				
Jamestown Community College	80	120	120	120
SUNY Agricultural and Technical Institute at Alfred	1,200	1,500	1,500	1,500
Total	1,280	1,620	1,620	1,620
Syracuse Area				
Auburn Community College	90	190	190	190
SUNY Agricultural and Technical Institute at Morrisville	550	750	750	750
Total	640	940	940	940

Estimate of full-time undergraduate facilities for liberal arts in two-year colleges, 1955–70

TWO-YEAR COLLEGES	1955	1960	1965	1970
Binghamton Area	—	—	—	—
Capital District Area				
La Salette Seminary	50	50	50	50
Mater Christi Seminary	56	55	55	55
		(95)	(95)	(95)
Total	106	105	105	105
		(145)	(145)	(145)
Mid-Hudson Area				
Bennett College	225	225	225	225
Epiphany Apostolic College	120	120	120	120
Eymard Preparatory Seminary	20	40	40	40
Mount Saint Mary College	75	75	75	75
			(200)	(200)
Orange County Community College	440	550	825	825
Our Lady of Hope Seminary	80	80	80	80
St. Andrew on Hudson	165	165	165	165
St. Joseph's Seraphic Seminary	105	110	110	110
Total	1,230	1,365	1,640	1,640
			(1,765)	(1,765)
Mohawk Valley Area	—	—	—	—
New York Area				
New York City				
Packer Collegiate Institute	120	120	120	120
Staten Island Community College	—	1,200	1,200	1,500
Total	120	1,320	1,320	1,620
Nassau	—	—	—	—
Rockland				
Dominican Junior College of Blauvelt	150	150	150	150
St. Thomas Aquinas College	500	500	500	1,000
Total	650	650	650	1,150
Westchester				
Briarcliff College	275	300	325	350
Concordia Collegiate Institute	25	40	55	55
Mercy Junior College	33	70	80	100
Mother Celine House of Studies	100	100	100	100
Total	433	510	560	605
Total New York Area	1,203	2,480	2,530	3,375
Niagara Frontier Area	—	—	—	—

Estimate of full-time undergraduate facilities for liberal arts in two-year colleges, 1955-70 (*Concluded*)

TWO-YEAR COLLEGES	1955	1960	1965	1970
Northern Area				
Bellarmine College	100	100	100	100
Paul Smith's College of Arts and Sciences	30	35	45	45
Total	130	135	145	145
Rochester Area				
Catherine McAuley Junior College	75	200	200	200
Divine Word Seminary	80	80	80	80
Total	155	280	280	280
Southwest Gateway Area				
Holy Cross Preparatory Seminary	90	90	90	90
Jamestown Community College	270	360	360	360
Total	360	450	450	450
Syracuse Area				
Auburn Community College	150	310	310	310
Cazenovia Junior College	185	185	200	200
Total	335	495	510	510

APPENDIX G

Estimate of full-time undergraduate facilities for two- and four-year programs in four-year institutions, 1955-70[a]

FOUR-YEAR INSTITUTIONS	1955	1960	1965	1970
Binghamton Area				
Baptist Bible Seminary	400	500	600	700
Hartwick College	550	610	700	700
State University of New York				
Harpur College	700	1,200	1,800	1,800
Teachers College at Oneonta	1,000	1,250	1,250	1,250
Total	2,650	3,560	4,350	4,450
Capital District Area				
College of Saint Rose	600	600	700	750
Rensselaer Polytechnic Institute	3,200	3,600	4,650	5,060[b] (5,450)
Russell Sage College	700	900	1,000 (1,000)	1,500
Saint Bernardine of Siena College	1,800	1,800	1,800	1,800
Skidmore College	1,059	1,200	1,275	1,350
SUNY College for Teachers at Albany	2,075	2,500	2,500	2,500
Union University	1,410	1,650	1,750	1,750
Total	10,844	12,250	13,675 (13,775)	14,710 (15,100)
Elmira Area				
Cornell University	5,550	5,950	6,250	6,350
Elmira College	390	550	750	750
Ithaca College	1,500	1,500	1,500	1,500
State University of New York				
College of Agriculture at Cornell University	2,000	2,100	2,400	2,400
College of Home Economics at Cornell University	600	600	600	600
School of Industrial and Labor Relations, Cornell University	300	400	400	400
Total	10,340	11,100	11,900	12,000
Mid-Hudson Area				
Bard College	252	290	370	370
Ladycliff College	300	400	400	400
Marian College	165	175	365	365
SUNY Teachers College at New Paltz	1,100	1,675	1,675	1,675
Vassar College	1,450	1,490	1,640	1,640
Total	3,267	4,030	4,450	4,450

[a] Area totals in these tables do not agree with those given in the text because these tables combine both two- and four-year facilities in four-year colleges.

[b] Here and following; numbers in parentheses indicate the facilities that will be available if conditional plans can be put into effect.

Estimate of full-time undergraduate facilities for two- and four-year programs in four-year institutions, 1955-70 (*Continued*)

FOUR-YEAR INSTITUTIONS	1955	1960	1965	1970
Mohawk Valley Area				
Hamilton College	750	750	750	750
Holy Trinity Orthodox Seminary	18	70	70	70
Utica College of Syracuse University	700	1,500	1,500	1,500
Total	1,468	2,320	2,320	2,320
New York Area				
New York City				
Cathedral College of the Immaculate Conception	225	350	500	500
College of the City of New York				
Brooklyn College	7,754	7,754	7,754	9,740
The City College	9,670	10,800	11,400	11,400
Hunter College	6,070	8,460	8,460	8,460
Queens College	3,904	4,875	4,875	4,875
College of Mount Saint Vincent	600	625	625	750
Columbia University	5,591	5,595	5,595	5,595
Barnard College	1,300	1,500	1,500	1,500
College of Pharmacy	500	700	700	700
School of Engineering	485	950	950	950
Teachers College	176	180	180	180
Cooper Union	592	835	835	835
Cornell University (School of Nursing)	260	260	260	260
Finch College	250	300	300	300
Fordham University	5,300	6,300	7,500	7,600
Jewish Theological Seminary	260	260	820	820
Juilliard School of Music	533	535	535	535
Long Island University	3,300	3,300	4,300	4,300
Manhattan College	2,515	3,260	3,765	4,075
Manhattan School of Music	600	600	600	600
Mannes College of Music	200	250	250	250
Marymount College	400	400	400	400
Mills College of Education	200	300	300	300
New York University	17,825	19,230	19,310	19,310
Notre Dame College of Staten Island	400	400	450	450
Pace College	1,000	1,500	1,500	1,500
Polytechnic Institute of Brooklyn	1,700	3,075	3,425	3,760
Pratt Institute	2,100	2,950	3,350	3,500
St. Francis College	600	700	700	1,000
St. John's University	4,111	7,945	8,620	11,395
St. Joseph's College for Women	450	450	600	600
St. Vladimir's Orthodox Theological Seminary	15	75	75	75
SUNY Maritime College	600	600	600	600
Wagner Lutheran College	950	1,200	1,500	2,000
Yeshiva University	1,353	2,500	2,500	2,500
Total	81,879	99,014	105,034	111,615

Estimate of full-time undergraduate facilities for two- and four-year programs in four-year institutions, 1955-70 (*Continued*)

FOUR-YEAR INSTITUTIONS	1955	1960	1965	1970
New York Area—(Continued)				
Nassau				
Adelphi College	1,834	2,500	2,500	2,500
C.W. Post College of Long Island University	250	1,375	2,300	2,300
Hofstra College	2,600	3,000	4,000	5,000
Molloy Catholic College for Women	43	600	700	700
Webb Institute of Naval Architecture	70	70	70	70
Total	4,797	7,545	9,570	10,570
Suffolk				
Brentwood College	305	305	305	305
Total	305	305	305	305
Rockland				
Nyack Missionary College	525	525	525	525
Total	525	525	525	525
Weschester				
College of New Rochelle	850	850 (900)	850 (950)	850 (950)
Good Counsel College	400	400	400	600
Iona College	1,807	2,200	2,200	2,500
The King's College	266	550	1,000	1,000
Manhattanville College of the Sacred Heart	600	600	600	600
Maryknoll Teachers College	125	150	175	200
Marymount College	590	590	590	590
St. Joseph's Seminary and College	252	250	250	250
Sarah Lawrence College	393	395	395	395
Total	5,283	5,985 (6,035)	6,460 (6,560)	6,985 (7,085)
Total New York Area	92,699	113,374 (113,424)	121,894 (121,994)	130,000 (130,000)
Niagara Frontier Area				
Canisius College	1,400	1,800	2,000	2,500
D'Youville College	870	1,150	1,250	1,250
Mt. St. Joseph Teachers College	60	100	100	100
Niagara University	1,070	1,500	2,500	3,000
Rosary Hill College	239	345	750	800
SUNY College for Teachers at Buffalo	2,800	3,275	3,275	3,275
University of Buffalo	5,350	7,915	9,485	10,900
Total	11,789	16,085	19,360	21,825

Estimate for full-time undergraduate facilities for two-year and four-year programs in four-year institutions, 1955-70 (*Concluded*)

FOUR-YEAR INSTITUTIONS	1955	1960	1965	1970
Northern Area				
Clarkson College of Technology	1,300	1,700	1,900	1,900
St. Lawrence University	1,400	1,500	1,500	1,500
State University of New York				
Teachers College at Plattsburgh	1,015	1,300	1,300	1,300
Teachers College at Potsdam	925	1,250	1,250	1,250
Total	4,640	5,750	5,950	5,950
Rochester Area				
The Colleges of the Seneca				
Hobart College	750	750	750	750
William Smith College	250	250	250	250
Keuka College	350	450	500	600
Nazareth College	850	1,000	1,000	1,000
Roberts Wesleyan College	445	445	445	445
Rochester Institute of Technology	2,000	2,800	3,200	3,500
St. Bernard's Seminary and College	365	365	365	365
St. John Fisher College	600	800	1,100	1,100
State University of New York				
Teachers College at Brockport	1,160	1,550	1,550	1,550
Teachers College at Geneseo	975	1,250	1,250	1,250
University of Rochester	2,588	2,988	3,438	3,788
Total	10,333	12,648	13,848	14,598
Southwest Gateway Area				
Alfred University	825	825	825	825
Houghton College	650	750	825	900
St. Bonaventure University	1,400	1,900	1,900	1,900
State University of New York				
College of Ceramics at Alfred University	400	400	400	400
Teachers College at Fredonia	805	1,250	1,250	1,250
Total	4,080	5,125	5,200	5,275
Syracuse Area				
Colgate University	1,325	1,325	1,325	1,325
Le Moyne College	1,250	1,250	1,250	1,250
State University of New York				
College of Forestry at Syracuse	550	550	550	550
Teachers College at Cortland	2,025	2,300	2,300	2,300
Teachers College at Oswego	1,675	2,400	2,400	2,400
Syracuse University	7,794	9,000	13,000	15,500
Wells College	360	360	400	400
Total	14,979	17,185	21,225	23,725